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How One Enterprising Dealer Got the Real Facts of the Rural Motor Express Field*

There's a Reason Why a Great Many Dealers Shy on the Rural Express Line Prospect—and Yet They Admit the Field Affords Wonderful Possibilities

By C. P. SHATTUCK

ELLING the prospect interested in a Rural Express route involves more than the mere sale of a truck or a number of trucks. What the average person, whose attention has been drawn to the fertile field afforded by development of highway transportation in agricultural sections, generally demands more than anything else, are concrete facts and specific information. The dealer who expects to successfully merchandise trucks for Rural Express lines must supply such information. In other words, the Rural Express prospect is entitled to the same attention as is given the city merchant. If we assume that the dealer sells the merchant transportation, and not a truck, is not the Rural Express prospect entitled to the same consideration, viz., that he should be properly advised before undertaking the transportation of the products of the farm to the city, which after all is the fundamental principle of the Rural Express?

Dealers Not Generally Sold on Plan

Dealers in the East are not sold on the Rural Express plan. The majority of those visited by the writer in several cities in New England and some sections of New York and New Jersey are not making any great effort to develop the Rural Express field, although they admit it affords wonderful possibilities. Some dealers, whose enthusiasm has been aroused, state that the greater number of Rural Express prospects have been attracted to the movement by the publicity campaigns and, although they have capital, know absolutely nothing of motor trucks and highway transportation.

Easy vs. Difficult Sales

Another factor is that the average city truck salesman who sells on a commission basis will, when left to his own resources, develop prospects in lines with which he is familiar and about which he can supply cost figures, etc. I have talked with a number of salesmen who, overflowing with enthusiasm as the result of

the weekly sales conference, have tackled the Rural Express prospect. The majority of these complain that the average prospect desires information and data that they cannot supply. The salesmen also say that the prospect accepts operating cost figures and takes for granted the practicability of the motor truck for Rural Express work, but this data will not close the prospect who not only wants the general plan of Rural Express operation, but its details.

Even the Dealer Not Posted

Consequently the salesman "passes the buck" to the dealer or sales manager who, very frequently, because of a lack of study of the problem, refers the prospect to the organization conducting the Rural Express publicity. And it is very probable that the prospect will again be passed along to some one else. If the prospect does not lose his enthusiasm he will eventually encounter an individual or a concern that has concrete knowledge of the Rural Express or is operating a line.

The point I am endeavoring to establish is that when a dealer allows a prospect, whether he be one interested in transporting coal or farm products, to walk out of his salesroom to some one else, that dealer is practically passing along a sale to some other dealer, for invariably the prospect will come into or be brought into contact with a dealer or a salesman who will have sufficient information on the subject to sell the prospect the idea, develop his plan of campaign and close a sale. The first named dealer will lose out because he will try to sell a truck, while the successful salesman will win, because he will sell transportation.

Selling the Rural Express

To quote a specific example and one showing the difference between the "order taker" and the merchandiser of transportation: In a certain New England city there is a dealer who has been very successful in selling trucks, but who isn't sold on the Rural Express. He was approached by a prospect desiring advice as well as information, but as the dealer did not have any data and was

lukewarm on the subject, the prospect was "passed along." Eventually the prospect was brought into contact with a small company operating what may be termed a Rural Express line, although the greater part of the business was general expressing.

The prospect acquired much valuable information, real practical information, and the head of the company suggested running over and calling on the representative of the trucks used by the company, remarking, "You'll find Mr. Brown a real live wire, ready to co-operate with you. And incidentally he's a real man's man. He's helped us out of our troubles more than once with advice, etc., etc." Did the prospect call on Mr. Brown? And did Mr. Brown close with the prospect? He did, and the result of the initial sale, which was followed with repeat orders, will be told later.

Acquiring Rural Express Data

Mr. Brown is of that class of dealers which believes in advertising. Not the newspaper, bill board or other conventional methods which he practices, but through successful and satisfied users of his trucks. He figured that the selling expense of putting over his first Rural Express truck sales might cut well into the profits, which it did, but he also believed that the time and money spent, would, if the plan proved feasible, sell more trucks, not only to the customer, but to others interested in highway transportation in agricultural sections. In other words, Mr. Brown was willing to exchange profits for information, confident that the experience gained could. be turned into profits in the shape of sales. As he had a number of sub-agents or branches, he estimated that the data could be profitably passed along to these. He also figured that if he could go out and get the real "dope" on Rural Express, make a sale and put over the operation of the line, he would not only put one over on his salesmen, but would have some nice facts to pass to his salesmen at the weekly conferences; in fact, Brown had a habit of occasionally slipping one over on the boys, for, as he re-marked, "It puts the pep in 'em. Makes

^{*}Ed. Note.—This is the second of a series of articles by Mr. Shattuck and the third will appear in an early issue.

them sit up and take notice when the old man gets active with a contract slip."

Made Personal Investigation

The first thing Brown did was to secure a map of his territory, a real map, one showing the roads, towns, cities, railroad lines, etc. Next he laid out a number of tentative routes which would include cities at either terminal, and towns, etc., between, for he figured that if the trucks were to be operated profitably they must carry capacity loads both ways, and that to accomplish this the line must not depend wholly upon the transportation of farm products. In other words, Brown took into consideration the fact that there would be certain periods of the year when the amount of food products hauled would be negligible, and that to make up for the deficiency a general expressing business should be developed.

Analyzing the Markets

Brown's next step was to get in touch with a friend, a commission merchant of years of experience in handling vegetables, fruits, etc., and from him he learned what products were shipped by rail and express; where from; seasons of marketing; the advantages and disadvantages of shipping by common carriers; cost of transportation; handling; time required and lost and the commission charges. Incidentally, Brown was told why prices vary in the markets, how fruits, etc., were distributed in the city, and he also learned of the characteristics of the farmer. The various selling channels were also investigated, these including the municipal, consumer and farmer markets. as well as the co-operative or consumers' leagues. A visit was also made to the Bureau of Markets conducted by the U. S. Department of Agriculture, where valuable information on marketing was obtained. The possibility of supplying large hotels was also investigated.

The following day Brown got in touch with the State Department of Agriculture and in addition to securing their reports, etc., was placed in contact with the State Board of Agriculture, which in this case, consists of practical farmers. The head of the State Bureau of Markets was consulted and many valuable suggestions were made by him and he also supplied Brown with letters of introduction to the county agents, officers of granges, vegetable and fruit growers' and farmers' associations. Agricultural maps were also secured. (A map of this type and showing the vegetable and fruit centers was published in the March issue of the COMMERCIAL CAR JOURNAL).

Calls on Farmers

Accompanied by a county agent, Brown spent a day or two with his car calling on the farmers, ascertaining their views on the Rural Express and obtaining first-hand data as to the requirements of the service, the information including the picking up of products, selling of same, payments, possible shipments, how the farmers obtained their supplies, etc. The investigation, of course, was

not confined to the well traveled highways, but included places not served, and particularly where the farmer had to drive several miles to the nearest shipping point. In his analysis of the territory Brown did not overlook the dairy sections or the possibility of the Rural Express serving the farmer who has a calf or hog or two to dispose of. Neither did he fail to look into the possibility of interesting the various store keepers in the Rural Express, for Brown figured that with the store keeper's influence much of the goods shipped to the country store could be diverted from the common carriers, provided the operator of the Rural Express could sell the city merchant or manufacturer the Rural Express service.

Rural Express vs. Railway Service

Although it required considerable time and tact to analyze the service afforded the various towns and cities between the two terminals of the proposed route by the railroads and other common carriers, and to ascertain how the manufacturers obtained their raw material, shipped finished products, and how the stores obtained their commodities, the time was well spent. Freight and express tariffs, the time required for shipment and distribution, and collections, were also secured.

Brown obtained a wealth of interesting details not the least valuable of which was a number of concerns which looked to him like good prospects for trucks. He also learned that at least two manufacturers shipped to their branch in the city by express, and that the service was not satisfactory, as the empty containers were bulky, easily damaged, and because of the service the company was obliged to carry a large number of extra containers which were expensive. Brown also visited the freight and express stations, and by keenness of observation and carefully worded questions obtained invaluable informationfor the average country agent will talk, and Brown was a student of human

It is not necessary to add that when Brown completed his investigations he had a fairly good line on the possibilities of the Rural Express in the territory, but he did not stop there, for he visited

a company said to have put over the plan, and not only investigated the service, but made a trip with one of the trucks, obtaining first-hand practical information all along the line.

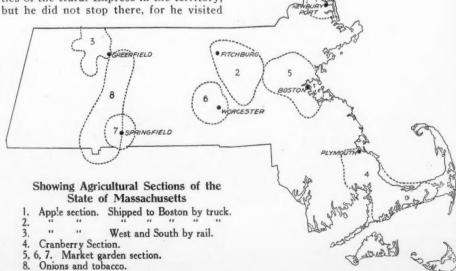
Correlating the Information

On his return to his office Brown boiled down his information to brass tacks and had his stenographer type the data in logical order. Copies were made, and these, supplemented by the personal observations of Brown and by suggestions, were supplied the sub-agents. On the following Monday morning, at the weekly sales conference, Brown startled the staff by announcing that the subject would be, "Selling the Rural Express Prospect." He called on salesman Smith to sell him (Brown). Smith started with the usual patter about the Progressive truck, what a wonderful chance the Rural Express was, etc., etc.

Brown smiled, nodded his head, but his expression changed when he began to fire question after question at Smith, and with the rapidity of a machine gun, Smith, of course, was a commission salesman, a good live wire on conventional lines, but he was not sold on the Rural Express and, consequently, could not answer. Brown turned his guns on another salesman, and another, with the same results. Then he reversed the order, and sold Smith because he (Brown) had the data. After answering questions and passing out the copies above referred to, Brown said, "Now, boys, it's up to you, and I expect results. Hereafter no more 'passing the buck' to me, and don't let a live prospect on this Rural Express get away from you. Stick to him. Take him out and show him, if he has to be shown.

Foundation for Repeat Orders

"And remember, that you may spend a lot of time on the first sale, but if the prospect comes through, and you must see that he does, you will be amply compensated for your efforts by the repeat orders, and there are going to be repeat orders, for the Rural Express is going to be operated on large lines just as are the express companies. You may find a few



one and two truck concerns, but with the development of the short haul the successful Rural Express, or combination of general express and transportation of food products, is going to be conducted by big companies, concerns operating fleets of trucks."

Prospects Overlooked by Dealer

Some dealers in the large cities are not sold on the Rural Express, stating that the farmers within 25 miles or so are well supplied with trucks and do their own hauling. I found several dealers in Boston who believed their own statements to this effect, but I do

between Newburyport and Boston, Mass. Not only are the trucks combining general expressing with the Rural Express, but the service proves that at least one dealer in Boston believes that the market in his territory has not yet reached the saturation point in truck sales.

Anticipating the usual question, "Is there money to be made with trucks competing with the railroad on a short haul and handling food products?" the fact that the company mentioned has increased from one truck to five, that all are paid for and the business supports a family of five brothers, is the answer. The trucks utilized are three 2½-ton

The greater part of the goods carried are standard commodities, but a large amount of fish, in barrels, is hauled from Boston. Stops are made intervening points to collect and deliver goods, groceries, fruits, etc., being hauled from Boston, The section in which the Broyers make their headquarters is a big apple producing country and hundreds of barrels are handled during the apple seasons. In many instances the orchards are located some distance from the railroad, and the trucks pick up at the farm and deliver direct at Boston. Large quantities of apples have been shipped abroad, and have been delivered from the orchards to the piers by the trucks.

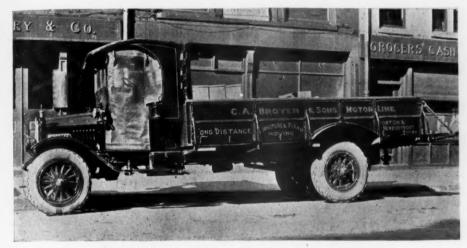


The writer talked with one farmer some 48 miles from Boston who utilizes the Broyer trucks. He said that he obtained better prices for his apples last fall because he was able to get them to the market when prices were high. This, of course, required quick delivery. The truck did the job from the farm to Boston within three hours. And it cost the farmer less to ship the apples than by railroad. Formerly he had to pay 20 cents a barrel to haul to the railroad, 25 cents for freight and 10 cents cartage charge in the city. Now the Rural Express picks up and delivers at a price that competes with the railroad, minus the collection and delivery charges.

Charges Less Than Railroad

The Broyers utilize the Rainier truck for collection at Newburyport, although the other machines also do "pick-up" work. Orders for "pick-ups" are phoned to the garage maintained by the Broyers, and all kinds of orders are executed in the cities.

The rates charged by the Broyers are less than those of the railroads for the haul alone, being about 15 cents the 100 less in many instances. While the store door delivery and less cost appeals to all shippers, they can be sold on the quicker service, which is the best selling argument in merchandising the service provided by motor highway transportation.



Signal Truck in Service With C. A. Broyer & Sons

This company operates a rural express between Newburyport and Boston, Mass. Note the Goodyear 40 x 8 pneumatics. This concern is equipping its trucks with the big shoes

not believe that they ever gave the subject the attention it deserves, for a visit to the markets in the Hub showed that while trucks were being operated over a considerable radius, bringing in food products as well as carrying general commodities to and from the city, much of the shipping was done by the rail-An investigation also showed roads. that within a radius of 50 miles of Boston are great market garden, apple, potato and cranberry sections, not altogether well served by the railroads despite the claims of the latter. In some instances shippers have to travel a considerable distance to reach the railroad and very often the railroad system is such that the perishables travel two legs of a triangle to reach their destination. Under these and similar conditions it is logical that the more direct route possible with the motor truck would not only reduce or equal present shipping costs, but would effect a considerable saving of time, and time is money when handling perishables.

Railroad Not a Competitor

The railroad should not be viewed as a competitor. It serves a useful purpose, but its scope of activity is limited in the field to be served by the Rural Express, and it cannot compete with the truck in service, and in many instances the truck can haul cheaper and return a profit to its owner. An instance demonstrating these contentions is the truck express service operated by C. A. Broyer & Sons,

Signals, one 5-ton Sterling and a 11/4-ton Rainier. Two of the Signals are equipped with the big pneumatics, Goodyears, and one has pneumatics in front and solids in the rear. Louis Broyer, with whom the writer rode on a trip, is sold on pneumatics and says that his machines will eventually be thus equipped.

Rural Express Part of Service

Four of the Broyer trucks, which are driven by the five brothers, operate between Newburyport and Boston, carrying practically capacity loads either way.



Transferring the Load From the Pickup Truck, an Autocar, to the Five-Ton Truck

Sixth National Foreign Trade Convention

Urge Reciprocal Export Policy. Advocate Private Ownership of Merchant Marine

OREIGN Trade Essential to American Industry" was the keynote of the Sixth National Foreign Trade Convention, which was held in Chicago, April 24 to 26. The convention was attended by nearly 1700 delegates.

Alba B. Johnson, of Philadelphia, president of the Baldwin Locomotive Works, in his speech accepting the permanent chairmanship of the Convention, demanded the safeguarding of American investments abroad, and urged the employment of the United States Merchant Marine in the extension of foreign commerce.

After the re-election of Mr. O. K. Davis as Secretary of the National Foreign Trade Council, Mr. Edward Prizer, president of the Vacuum Oil Company, was introduced as the first formal speaker of the Convention. Mr. Prizer, in brief, stated: "We are now facing an industrial crisis unless we can largely and rapidly increase our exports of finished products; for in no other way can our great industrial capacity be utilized. There is the further realization that industrial disaster can be averted only by great expansion of exports: that labor will be unemployed if our industrial output is limited to home consumption. If we fail now in far-reaching enterprise, broad and courageous outlook, and genuine and determined effort, we will again fall back to the third-rate position we occupied prior to the war as industrial exporters, with the opportunity now existing lost perhans forever.

"Efforts for overseas trade based on lack of first-hand and accurate knowledge of foreign markets will be wasteful, ineffective and disappointing. In the great markets abroad different conditions exist. Behind the great buying public, centuries of custom and prejudice exist. National habits are fixed and more or less unchangeable. New things are not impossible of introduction and sale in time, but an effort to change established habits as relates to staples of use and demand is an almost hopeless undertaking. The great body of consumers in many of the markets of largest promise are uneducated, and resentful of change." Mr. Prizer advocated "the choosing of foreign representatives with great care. They should be rigidly trained for their required duties. They should be those desirous only of establishing a more or less permanent foreign career; if going to a foreign-language country, they should be able to speak the tongue or quickly to acquire it. Men with little children should not be chosen for the tropics, and it should be certain that wives of married men join with their husbands in enthusiasm for the foreign

"Another imperative essential is support by our National Government to the full limit

"America's Financial Equipment for Foreign Trade" was the theme of Vice-President Fred I. Kent, of the Bankers' Trust Company, who in part said:

"The most extraordinary condition will face the United States in relation to its foreign trade upon the signing of the peace agreement.

"The United States will stand as the one great country of the world, with power to produce, manufacture and deliver to other nations all of the commodities vital to man's needs, and covering as well those things required for his convenience and desired for his pleasure. On the other hand, the power to purchase our goods by those countries which are our natural customers has been seriously depleted. All of the belligerent nations of Europe have great financial problems facing them, which cannot be solved honorably and successfully unless their imports are confined largely to essentials until such time as their exports of commodities and service exceed in value their imports and other current foreign obligations.

"The neutral countries of Europe have carried on a most remunerative business throughout the period of the war, that has enabled them to make loans, place deposits, or both, with each set of belligerents in a large way. They have depleted their countries of many necessities for convenient living and operation, in order to obtain the high prices possible. They are now in position to use their foreign credits so created to buy goods to replace such depletion, and as they do so they will be helping the world work toward a more satisfactory balance of international indebtedness, and labor will find employment in the meantime. There will be a strong tendency for such countries to make their purchases from the debtor countries, as there will be much to interfere with arbitrage between many sets of nations.

"Before the war and during the war the United States imported more from South America than it exported, but the situation today is very different than it was previous to the war. After the United States entered the war the development of such trade was seriously affected, due to lack of shipping and the necessity of conserving our resources for war purposes. Even so, business relationships with South American importers were unquestionably formed which will result in holding a certain part of the new trade, and form a basis for further trade.

"In the Far East our import requirements are greatly in excess of the import needs from us of those from whom we buy. Our purchasers from India, the East Indies, China and Japan cover many things that cannot be obtained elsewhere in the world in the quantities desired. The trade of India is largely controlled

by Great Britain, but there would seem good reason to believe that our exports to China and Japan can be increased."

At the close of Mr. Kent's address, in the absence of Hugh Frayne, of the War Industries Board, Mr. Tracy Lay, Consul attached to the Consulate General at Paris, gave an interesting description of France in its present state of industrial prostration compared with its pre-war prosperity.

William Piggott, president of the Seattle Car & Foundry Company, concluded the morning session with a plea to reduce the needless cost of the factory.

The Thursday afternoon session was opened by Charles J. Brand, Chief of Bureau of Markets, U. S. Department of Agriculture, by a speech in which he compared the new with the old methods and plans of exports and gave many interesting statistics relating to our foreign trade.

John Barrett, Director of the Bureau of South American Republics, was given the floor and invited the delegates all down to Washington to a big Pan-American Trade Convention, to be held the first week in June, at which he said every South American and Central American country would be represented by merchants who could speak for their respective countries with authority.

Following Mr. Barrett, John M. Parker, president of the New Mississippi Valley Trade Association, spoke on the Mississippi Valley and Foreign Trade. He advocated private ownership of railroads and merchant marine. He stated that our new ships should not be disposed of by our government until the manufacturers and exporters of the country had a chance to see to it that they were employed in our export and import trade. This later import trade, he claimed, was as important to us as

the United States in countries abroad.

The first day's session was concluded by the address of the Hon. William S. Culbertson, of the U. S. Tariff Commission, upon the subject of "The Bargaining Tariff," and the speech of J. W. Hook, president, Allied Machinery Co. of America. upon the subject, "The Stabilizing Effect on American Industry of a Definite Foreign Trade Policy."

our exports. In closing he made a plea

for a strong consular representative by

The climax of interest of the convention was the banquet Friday night, which was attended by all of the delegates. John J. Arnold presided. Edward N. Hurley, chairman of the United States Shipping Board, who spoke on "The Future of Our Foreign Trade"; Governor Lowden, who spoke on the theme, "The Meaning of Foreign Trade to the Middle West," and James A. Farrell, chairman National Foreign Trade Council, who responded to the toast, "American Maritime Policy," divided the attention equally.

New York Dealers Establish : Motor Truck Exchange

New Plan Destined to Stabilize the Price on Used Trucks and Prevent Demoralization of the Trade

By C. S. PERRIE

HE efforts of the Dealers' Division of the Motor Truck Association of America, Inc., to grapple with the used truck problem, have resulted in the combination of a prospectus that is to be printed and circulated among the dealers in commercial cars in New York City. According to an advance copy, the proposed Metropolitan Motor Truck Exchange, as it will be called, will be a stock company capitalized at \$50,000, of 500 shares of common stock, at \$100 par. The stock is to be offered only to members of the dealers' division of the Motor Truck Association of America. The minimum number of shares allowed per member is to be five, and the maximum twenty-five. All money is to be devoted to such corporate purposes as may be determined by a board of directors.

To Control Holding of Stock

Sale of stock is subject to the following stipulation: "Any shares of the capital stock of this corporation which may at any time become the property of any person, persons, firm, partnership, etc., other than members, shall be redeemable by this corporation, in whole or in part, at any time, at the option of the board of directors, upon 30 days' notice by mail to the holders of such stock, and may be redeemed by the payment of \$100 in cash for each share so called."

Evils of Trade-in Defined

The prospectus in analyzing the trade custom of accepting used trucks, as part payment for new, points out that the procedure has developed into a source of serious expense and financial loss, and that the "allowance expected by the prospective buyer is one equal to or greater than the highest bid made to him, and this bid is only too often the one made by the dealer least able financially to make such allowance as well as one that bears no relation to the value of the truck. The dealer who finally consummates the transaction upon the basis of this excessive allowance is in reality giving a rebate from the price of his new truck. Every dealer is thus subject to the whim of his most unwise competitor and the entire trade is demoralized."

What Exchange Affords

After further discussing the many angles of the "trade-in" problem, the prospectus points out that the following benefits will be derived by members of the Exchange:

1—Provision of an appraiser or appraisers of the very highest ability.

2—Elimination of the expenses of duplicate appraisals.

3—Provision against excessive allowances.

4-Stabilizing resale prices.

5—Mutualization of the financial burden incident to the purchase, repair and resale of used trucks.

6—Relief of members from the embarrassment of dickering with prospective purchasers over allowances to be made on their used trucks.

7—Discontinuance by members of the practice of making deductions from salesmen's commissions as a compensating offset to excessive used truck allowances.

8—Relief for members from the necessity of repairing and reselling trucks not of their own make, (handled or represented).

9—Relief of members' high rental shops and sales space.

10—Centralization of practically all repairs and resales in one building, which may be located where rents are cheap.

11—Provision of a ready and financially responsible outlet for all used trucks.

The Plan in Detail

It is proposed to establish the Exchange on the east side of the city or in Long Island. The building is to house the repair shops, sales floors and general offices. When a used truck is offered a member, he notifies the appraiser, giving make and capacity of truck, style of body, engine number, etc. The valuation by the appraiser is filed, as well as other details, and this information is available to members by telephone. All members must accept this valuation when taking the truck as part payment for new.

Before any repairs are made the Exchange will offer the truck to its representative dealer (a member) at the valuation price plus 10 per cent. For example: The Smith Company takes in a Brown truck, say at \$500. The truck is then offered to the Brown dealer for \$500 plus 10 per cent., or \$550. If the Brown Company declines to buy the truck the Exchange will, after making such repairs as may seem essential, place it in stock.

Disposing of the Used Trucks

The plan includes the use of salesmen by the Exchange, and salesmen and members will have the privilege of sell-On all such sales made by the members' salesmen a commission will be allowed to the member, and this commission is to be paid by the Exchange to the member, and not to the member's salesman. Parts are to be purchased from members at prices equal to the cost plus one-half of the member's discounts thereon. All financial transactions between the Exchange and its members will be upon the basis of net cash in 30 days. In other words, the member taking in a used truck and refusing to buy it from the Exchange will receive cash. Owing to the large number of Ford truck dealers in New

York, such dealers need not call upon the Exchange's appraiser nor be bound by his appraisals in connection with the purchase of used Fords in exchange for Fords, neither will the Exchange be under the necessity of purchasing any used Fords taken in by such dealers in exchange for Fords.

Cost of Operating Exchange

The estimated expenses of conducting the Exchange are as follows:

Rent (including light, heat, water), 50	19 000	
cents sq. ft.		
Power, \$100 the month	1,200	
Insurance, fire, liability and compen-		
sation	900	
Taxes, state and municipal, \$20,000		
at 2 per cent	400	
Advertising, telephone, stationery,		
postage, office expenses	6,000	
Depreciation, machinery, etc., 10 per	.,	
cent, \$10,000	1.000	
Salary, manager and appraiser	7,500	
Salary, treasurer and secretary	2,000	
Salary, office stenographer and clerks	2,000	
Salary, shop foreman	3,000	
Salary, shop clerk and timekeeper		
Salary, janitor	1,200	
Colors wight motehans		
Salary, night watchman	900	
Interest on borrowed capital, \$50,000		
at 6 per cent.	3,000	
Interest on paid-in capital, \$50,000 at		
6 per cent	3,000	
Commissions to salesmen, 10 per cent.		
on one-half total sales	2,500	
Miscellaneous expenses	5,000	
_		
Total expenses (estimated)	\$52,500	
Gross profits on sales (estimated).		
20 per cent. on \$50,000	\$10,000	
Estimated net profit on capital, 50	,	
per cent	25,000	
	-0,000	

Direction of the affairs of the Exchange is to be vested in a Board of Directors elected by the members. The president, vice-president, treasurer and secretary are to be members of the board, and all officers are to serve without salary until the business of the Exchange necessitates the discontinuance of volunteer assistance. The offices of manager and appraiser are to be combined.

Problems to be Solved

The successful launching of the Exchange depends largely upon obtaining the majority of the truck dealers in Manhattan to join the organization. Those who have given considerable time to the study of the used truck problem believe that the greater number of dealers will join, or at least a sufficient number to make the plan feasible. On the other hand some dealers show but little interest in the movement, and in explanation say that they do not accept a used truck as part payment for a new one, and some will not accept the make they represent. Those dealers who have been untiring in their efforts to solve the used truck problem believe that the "uninterested" dealers will join the organization eventually, if for no reason other than giving it their moral support.

Some dealers who have attended the meetings of the committee of the

Dealers' Division are of the opinion that it will be difficult to formulate a plan that will make evasion of its rules impossible without violating the agreements. In reply, those interested in the movement state that a dealer practicing such methods will in time convict himself, and, with a severe penalty, will be an object lesson to others of his type. Suggestion has been made that it would be possible to give publicity to a member dropped from the association for violation of the trading rule, and without affording the guilty party any legal redress.

There is no doubt but what the average dealer in Manhattan will welcome

any practical organization that can cope with the used truck problem. Not a few dealers have more used trucks in storage than they are willing to admit, and these cars are increasing in cost daily. In some instances the dealer does not turn his money on the trade-in, and in others, the cars are occupying space in high rental quarters. Shopping by a certain class of "prospects" is increasing, and it is not an infrequent occurrence for one of these "prospects" to visit half a dozen dealers or more. As one dealer aptly remarks, "Something must be done to stabilize the selling of trucks in New York City."

Supplementary Forecast of Tax Rulings on Revenue Act of 1918

HE National Automobile Chamber of Commerce, Inc., 7 East 42nd St., New York, has issued General Bulletin No. 293, to its members, giving additional information on tax rulings. The following is based on the best available information, but as yet the Revenue Bureau has issued no official rulings:

1. The manufacturer or producer of tires, inner tubes, parts and accessories will not be taxed on such of these as he sells to car manufacturers for original equipment, but he will be taxed on such as he sells to car manufacturers for paid repairs or replacements.

2. We are asking the Revenue Bureau to rule that the makers of tires parts and accessories may sell all tires, parts and accessories to builders of complete cars or motor trucks at the regular price, without putting on any tax. When these tires parts and accessories are built into a complete automobile and sold, the manufacturer pays the Government the tax on the complete car or truck. If. however, he sells one of these tires parts or accessories-like an axle, or a motor or a transmission, then he is obliged to return to the Government five per cent. on the price he receives. This plan will bring the Government a little more money, but above all would eliminate much red tape and bookkeeping.

3. Meanwhile, our manufacturers have been asking the parts and accessory makers to all follow a plan which some of them have already adopted—to wit:—Bill the truck and car manufacturer with tires parts and accessories at the regular price, with a notation on the bill that the five per cent. war tax may be added later if the Government so orders. It is felt that this will simplify matters generally, until we get final rulings.

4. Commissioner Roper has ruled, in a letter to one of our members, that when the sale of a part—say an axle—is made by a motor vehicle manufacturer and the tax is collected, and subsequently the part is returned or the charge eliminated because it proved to be a part due under the guarantee, then the

amount of the tax which has been paid to the Government during that current month, may be deducted from the tax return the next month, thus overcoming the need for applying for drawback. The result will be that at the end of the year the manufacturer will have paid to the Government on his business only the proper percentage of the exact amount of money he received from sales, which is the intention of the law.

5. Sales by the manufacturer, producer or importer of automobile trucks, automobile wagons, other automobiles, motor cycles, (or tires, inner tubes, parts and accessories therefor) to the Federal Government are taxable.

6. Some officials of the Government are objecting to bids on such articles reading so much for the article, and so much for the war tax. We understand the basis of this objection to be that as the manufacturer, not the Government, is the one taxed, it is an error to call this a tax. This is red tape and it seems desirable to make your bids read so much for the article, plus so much to reimburse the bidder for the tax levied upon him.

7. As only the maker is taxed, all makers, distributors, dealers and others passing the tax on to the ultimate consumer should use a phrase making it clear that the purchaser is not asked to "pay a tax," but is asked to reimburse for the tax the manufacturer has paid. It is suggested that the tax item be indicated by the expression "To reimburse the manufacturer for excise tax."

8. While the department's first thought was to tax retail sales on basis of highest wholesale price received, Bureau now indicates that probably retail sales will be taxed on the basis of the average price received on wholesale sales during preceding month.

9. The advice is again given that, on all sales contracts for cars, trucks, tires parts or accessories, notations should be made that the purchaser must reimburse the manufacturer for any taxes, federal, state or municipal, which the manufacturer may be required to pay.

The Freight Rates on Road Materials Reduced

WASHINGTON, April 11.—Walker L. Hines, Director General of Railroads, to-day announced that he has decided, after consultation with the Departments of Agriculture, Commerce and Labor, to reduce the present regularly published tariff rates upon specified road-building materials, when for use in federal, state, county, parish, township or municipal government road work.

This will authorize all railroads under Federal control to apply rates as shown below on carload shipments of stone (broken, crushed and ground) slag, shells, chatts, cherts, sand and gravel, shipped during the period from May 1 to December 31, 1919, inclusive, when for use in road building or road maintenance, and when consigned to and the freight thereon paid by Federal, state, county, parish, township or municipal government.

The reduced rates to be applied on such material shall be 10 cents per net ton less than the regularly published tariff rates in effect for the transportation of these materials for commercial uses at the time shipments moved; but with a minimum charge of 40 cents per net ton, except that where the regularly published commercial rate is less than 40 cents per net ton, then such regularly published rate shall apply.

These reduced rates may be applied on shipments consigned as outlined above, but in care of a contractor, provided the freight is paid by the Government, and provided proper certification is made by the Government through its properly accredited representative that the shipments are for the use of, and the reduction in the rate will accrue to the Government.

The rates authorized are to be applied without publication in tariffs, account government property, but each railroad hauling such materials is charged with the duty of seeing that the reduced rates are applied only on bona fide Government material where the freight charges saved by the reduction will accrue to the Government.

To secure the benefit of the reduction stated in the notice, it will be necessary for the Federal, state, county, parish, township or municipal government officials to certify that the material will be used for road work, and that the governmental unit they represent will be benefited by the reduced rates.

It was explained during an interview with the railroad officials that the word "government," used in the third paragraph of the notice, meant any governmental unit dealing with road or street work, as county, township, parish, etc.

The materials can be shipped in care of the contractor doing the work, but the governmental unit will be responsible for the freight charges, and to see that all of the material is used for road and street purposes. Payment on all freight must be by the different governmental units, and made to the railroad company.

National Motor Truck Sales Managers' Meeting Most Successful in History of Association

Convention Proves a Great Get-Together Event of Motor Truckdom.

Many Important Problems Discussed

HILADELPHIA, April 14.-The National Association of Motor Truck Sales Managers met in Philadelphia April 11th and 12th at the Bellevue-Stratford Hotel, to discuss important problems connected with the motor truck industry. The sessions of the first day were open only to members. Incidentally, it may be said that some 57 of the largest truck makers in the country are in the membership and pertinent subjects were freely discussed by those present. President J. G. Tracy presided during the sessions. The Satpresided during the sessions. urday afternoon session and the banquet were open to all those in the vicinity interested in trucks and tractors. A large number came from the surrounding territory, not only in Pennsylvania, but New Jersey and New York City, the affair assuming the character of a general get-together of the truck interests of the country.

The Banquet

The Friday evening banquet was a most notable affair, at which there were more than 400 present. It was held in the large ballroom and was presided over by President Tracy with Honorable Ex-Congressman R. O. Moon, toastmaster. The speakers included the Hon-

orable John Barrett, Director of the Pan-American Union, who gave a very interesting address on "Our Relations With the Other Americas." All were greatly interested in the talk of Colonel Fred Glover, Director of Sales, Purchase, Storage, Traffic Division of War Department.

Colonel Glover reassured the Sales Managers and the members of the trade that by the time the Government supplied the various departments with all the trucks they needed, there would not be many left over to cause any distress or any upsetting of the market. He said that the departments have been advised to take more than they actually need at the present time, so that they will not have to come back again in four or five months and buy them back from the manufacturers. He reiterated statements made at various trade gatherings that the rumors which have been going the rounds of the newspapers are totally unfounded, and that the few trucks that have been sold were I. C. trucks (inspected and condemned) and which were fit for nothing else but salvage. He said that from time to time, the Army will sell such trucks. About eighty have already been sold in Baltimore. He assured the manufacturers that not until the various government departments

and the new Army have been fully supplied with machines, will the surplus be sold. When that time arrives the manufacturers will be given due notice, so that they can buy back some of these trucks and rebuild them, while the remainder will be distributed over the whole country and sold by auction or under sealed bids. He closed his remarks with the statement that no cars will be sold unless the manufacturers are notified and that the manufacturers will be notified before the public. It is needless to say that his remarks were received with great applause.

John S. Cravens, Chairman of the Highways Transport Committee of the Council of National Defense, in his address, discussed the work of the Committee and its relation to the motor industry.

In his address Mr. Cravens said in part: "I firmly believe that the development of road construction and the use of the motor truck is the next great national industrial development.

"It has been the Council's policy not to undertake the study of engineering features of road construction, nor to enter too much into the detail of how the value of road construction and use is to be realized.



Banquet of National Association of Motor Truck Sales Managers, Held at the Bellevue-Stratford, Philadelphia, April 11, 1919

"The Council also believes that the application of the use of the truck is something which should be properly left to the producers, for it is, in a real analysis,

their business problem.

"The Council of National Defense is not selling trucks—we try rather to sell ideas. But one of the purposes of the Highways Transport Committee has been to educate the people as to the proper place of the motor truck as an agency of transport, in order that it might seek and maintain the place to which its usefulness entitles it.

"The vehicle and the road must be demonstrated to be complements of each other and inseparable parts of a great agency of public service. Once the people thoroughly realize this, they will demand and have good roads when and

where they will serve.

"It is being realized moreover that to no class does road improvement mean so much as it does to the farmer. Let the people once understand that, and we need have no fear concerning road construction.

"No less important than road construction is provision for road maintenance. To build roads without adequate provision for maintenance is an economic

waste.

"How is this to be brought about? Without particularizing too far, it might be taken as a fair working basis that in the future the maintenance charge should be imposed upon the traffic and the capital expense involved in the construction should be extinguished by taxation. If at the end of the retirement period our roads were still good, we would have gained that much; and if they were not, we would at least have free credit with which we might build again.

"There is another feature of our work that is of interest to you who are concerned with the future of the motor truck. It is the declared policy of the United States Railroad Administration greatly to curtail the construction of spur or feeder lines. This at once opens possibilities to the motor truck, for the demand for transportation is constantly growing. Some of the railroad authorities openly advocate the establishment of country truck lines, especially those running at right angles to the main rail routes, and I believe this entente could be fostered to the mutual benefit of both parties.

"Some have even invoked the aid of ourselves and our state committees in a study of the short haul problem, in order that relations of both rail and truck thereto might be better understood, and the economic field of usefulness of each

be better determined.

"We have also endeavored to codify all we learn on this great subject, to coordinate the efforts of different bodies all working to the same purpose, and to act as a clearing house in which may center the knowledge of the activities of various state highway departments, which may again be disseminated in order that all may receive the benefit of that which is developed by one."

Edward James Cattell, city statistician of Philadelphia, roused the audience to

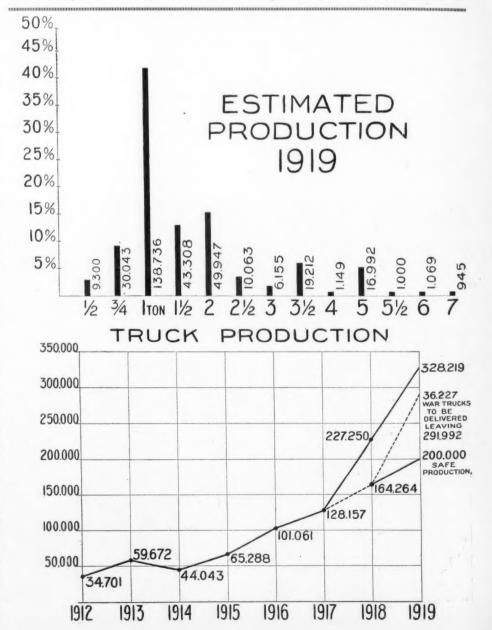
great enthusiasm with his usual oratory. H. Walton Heegstra, of Chicago, talked very much to the point on the subject of "If I Sold Things." The after-dinner speech-making was brought to a close by a very brief address by C. A. Musselman, Regional Chairman, Highway, Transport Committee, Philadelphia.

The Friday Morning Session

The closed session on Friday morning was opened by an address of "Welcome" by Lee J. Eastman, President of the Packard Motor Car Co., of Philadelphia, in behalf of the Philadelphia Motor Truck Dealers' Association and the Philadelphia Chamber of Commerce. He was answered by Mr. John E. Tracy, President of the Association, who told of the objects and aims of the Association After a brief business session, including the enrollment of new members, report of membership committee, report of standing committee, etc., the papers were taken up.

The first speaker on the program was E. S. Foljambe, Directing Editor of Chilton Publications, Philadelphia, who talk-

ed on "What Are the Truck Manufacturers Doing in Their Sales Departments to Justify the Contemplated Increased Production?" In this talk he made it very clear that the production which has been planned by the manufacturers of trucks for the year 1919, would, in his estimation, be an over-production and cause trouble in the industry. Backing up this statement, he analyzed conditions that exist at the present time as brought about by the war, and pointed out that the future field for trucks is not in the city, but in the country. He also emphasized the importance of the sale of trucks in highways transportation and called the attention of the members to the opportunity which is now before the truck industry of distributing, more uniformly, the population of the country over the entire area of the United States by means of bringing to those people the necessities of life, over the highways, by motor trucks. He said that in former years population and industry have followed, in congested ribbons, the borders of navigable lakes and inland waters and along the edges of railroads. Now we



are entering upon the great era of highways transportation, which will make possible this more general distribution of humanity and its industry. Some of the charts, which were used in this talk, are herewith reproduced.

The question of improving the present standard of service and the parts policies, and also the standard warranty, was brought up by E. T. Herbig, the second speaker. As Sales Manager of the Service Motor Truck Company of Wabash, Ind., Mr. Herbig has had practical experience along these lines and reiterated

an educational campaign carried out on a co-operative basis.

The members were then taken, by automobile, to the Philadelphia Automobile Trade Association where they enjoyed a noon-day luncheon provided by that Association.

Other Organizations Send Greetings and Co-operative Assurance

President Tracy announced that the N. A. C. C. sends greetings, etc., and offers the use of its libraries and rooms for meetings of committees of the Na-

luminating talk on the subject of "Hiring and Training Salesmen." Mr. Heegstra commented on the inefficiency of the average salesman as to his being fully informed on the policies of the concern for which he is selling and his insufficient knowledge of its products. He criticised the average salesman for making too many claims which cannot be lived up to.

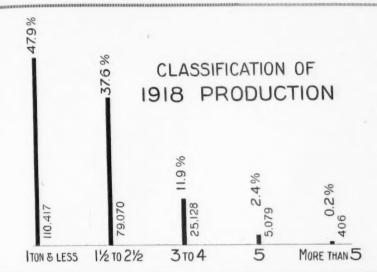
The influence of sales organizations on highway development was the subject talked upon by E. J. Mehren, Editor of Engineering News-Record, N. Y. In this talk Mr. Mehren made a plea for greater interest on the part of sales organizations in highways development. He condemned any policy whereby the roadbuilding problem of the country should be placed in the hands of any department which is already overloaded with other duties. He advocated a highway commission which would have the building of roads at heart.

A. S. Duckworth, of the David Lupton Sons Co., Philadelphia, gave a very instructive talk, illustrated by lantern slides, on the proper method of handling cost systems. Mr. Duckworth based his remarks on the National Standard Motor Truck Cost System, which has been described and illustrated in previous issues of this journal.

Charles W. Reid, of the Committee of National Defense, Washington, D. C., gave a short history on what the Highways Transport Committee accomplished and its future prospects. He also laid stress on the fact that a great many selling organizations are simply trying to sell trucks and not caring about the future and, unless this policy is remedied, a great many failures are sure to result.

At the luncheon, held by the members of the Convention, it was decided to telegraph a resolution as follows: Resolved that the Association of Motor Truck Sales Managers assembled in Philadelphia today urgently appealed to Governor Albert Sleeper to defer final action on Michigan House Bill 348 for reconsideration and to grant a hearing on the bill to motor truck and trailer interests to present facts and statements to show that this bill is detrimental to the development of economical and efficient transportation over the highways. This bill has since then been held up and is now being reconsidered in committee.

Much of the success of the meeting was undoubtedly due to the efficient work of the arrangement and entertainment committee, which consisted of the following men: C. A. Musselman, chairman. For the Motor Truck Association of Philadelphia, Lee J. Eastman, chairman; J. C. Schwartz, W. H. Metcalf. For the Automobile Accessories Business Association of Philadelphia, W. Ralph Walton, chairman: N. A. Petry and G. D. Schearer. For the Philadelphia Automobile Trade Association, E. H. Fitch, chairman; W. B. McCullough, W. G. Herbert and H. T. Boulden, first vicepresident of the Association and chairman of the entertainment committee.



many of the statements which he made not so long ago before the N. A. C. C. Conference of Truck Manufacturers in New York. The following are some of the suggestions which he made: That the term "making good" is vague and should not be used. It is usually taken to mean that the dealer is expected to pay for the installing of the new part—this is not what is intended or meant by the wording of the warranty.

There should also be a statement, in the warranty, that the governor on the truck must be in working order and operating

On the question as to whether the dealer should prepay the expenses on broken parts, returned to the manufacturer, it was generally agreed, by those present, that the manufacturer's price and his terms are based on the assumption that the dealer will pay this charge. It was also stated that the dealer understands this and that there are very few who kick in regard to this agreement; therefore, the present arrangement should remain. The discussion brought out several speakers, one of whom made the statement that his company used to travel 125 service men; now they are not traveling a single one, although their production is 175,000 cars yearly. The morning session was brought to a close by Sidney J. Stern, Advertising Manager of the Automobile Trade Directory, New York, who talked very much to the point on advertising and advocated a national advertising campaign in the trade and local newspapers, and the gathering of data for use in these ads-in other words,

tional Association of Truck Sales Managers. President Gramm, of the Motor Truck Manufacturers' Association, also delivered a similar message from his members and a like message arrived from A. G. Moock, Business Manager of the National Automobile Dealers' Association, in which he pledged the assistance of the N. A. D. A. to the truck dealers throughout the country, and to the Sales Managers' Association in their effort to offset the danger due to the Government's placing war trucks on the market.

Mr. Herbig made a motion, which was carried, that the Association appoint three men to constitute a committee to confer with the various organizations that have expressed their willingness to co-operate with the Association of Motor Truck Sales Managers.

Farm Tractors Not Overlooked

At the Saturday morning session the farm tractor was largely discussed by the meeting. A. R. Kroh opened Saturday morning's session with a line of rapid fire talk that made some of the Sales Managers sit up and take notice. Extracts of Mr. Kroh's address are printed elsewhere in this issue.

In the absence of F. A. Seiberling, of the Goodyear Tire and Rubber Co., Mr. Quine, Publicity Director, spoke on the future of the farm tractor in the motor truck industry.

Harry Tipper, of New York, made a short address and presented the advantages of a research department in connection with the sales department.

H. Walton Heegstra gave a very il-

Motorization of the Farm

Extracts of address made by A. R. KROH, before National Association of Motor Truck Sales Managers

T is my belief that the farmer of today needs your help more than any other class of people in America, and my purpose is to give you a reason for this argument.

We will start as a sort of a constructive basis of argument back in the days when one man could go out into a field of small grain with a cradle and cut two acres of grain per day, but we must remember that that man had to be followed by another man who bound this grain by hand. Then came the day when the self-binder was invented and the farmer who was not sufficiently progressive to take advantage of it fell by the wayside and could not compete with his more progressive neighbor.

In those days corn and other farm commodities were planted by hand, cultivated with the hoe; then came the planter, the drill, the cultivator on wheels and later the riding cultivator, and this trend of progress has gained increased momentum each and every year until today the percentage of acreage of

crops in the American farms that are entirely handled by tractors and motor equipment is staggering. So much for the actual production of farm crops.

Now, let us approach the subject from the standpoint of transportation. There was a day when the wheelbarrow was looked upon as an important method of transportation. Then came the ox cart, then the horse propelled vehicles, and today the truck, and gentlemen, if time permitted we believe that we can convince you with sane, sound argument that the present day agriculturist needs the truck in successful operation of his farm more than he does the tractor, but the fact remains that no farm is properly motorized with either the tractor or truck alone. If the farmer must keep his horses standing in the barn waiting for the time when they must transport the crop to market, he cannot afford to buy the tractor, and it has been proven beyond a question of doubt by great numbers of farmers throughout the central agricultural sections that all the work of the farm can be done by the tractor and the motor truck or power wagon:

Labor Problem Affects the Farmer

It is an admitted fact that one man with a tractor of sufficient power to pull two 14-in. plows can turn over as much soil in one day as the same man can with three horses and one 14-in. plow in six days, and, while this in itself may not be so convincing an argument, the fact remains that the labor situation of today is serious and the farmer who hopes to continue to operate his farm must adopt the most up-to-date methods.

From 1850 to 1900, when the old handmethods of farming were in vogue, farm values in America increased from 4 billion to 20 billion dollars. From 1900 to the present day, when the more modern methods have been in vogue, farm values have increased from 20 billion to 75 billion dollars, due to improved methods and the ability of the farmer to more intensely cultivate a wider acreage and more advantageously market his commodity from a standpoint of price. These increased values in farm lands are due, of course, largely to the question of supply and demand.

From 1899 to 1909 the population of the U. S. increased 21 per cent., and even with improved methods in those days, it was only possible to increase the production of food stuffs 10 per cent. —hence the increased cost of living with which we are all so thoroughly acquainted.

The population in America has been increasing so much more rapidly than the increase in the production of food stuffs that for a period of 7 years prior to the European war the U. S. was importing corn from Japan and meat from the Argentine and Australia, and during that period the importation of foodstuffs, from a standpoint of dollars and cents, was practically equal to the exportation of food-stuffs from America.

Rural Population Greatly Depleted

Over 8 millions of people have moved from the farms in the U. S. to the cities since 1900, and the heaviest percentage of the emigrants from foreign countries to the United States are locating in the densely populated manufacturing centers of America, rather than migrating to the farm.

This condition is not new from a world-wide standpoint, for ancient history shows us that the Greek preferred Athens to the rural district, and the Romans the circus to the farm.

It is common knowledge that all European nations, prior to the breaking out of the war were, as nations, giving serious consideration to the constantly depleting rural population.

In 1880, 70 per cent. of the population in the U. S. lived on farms, while 30 per cent. lived in the cities, and it was necessary then for each farmer to produce only sufficient food for himself and a mere fraction of another family. Today over 70 per cent. of the population of the U. S. lives in the densely populated cities, while less than 30 per cent. live on the farms, and each farmer must produce enough for himself and two additional families in the U. S., not taking into consideration starving Europe.

In 1880 the farmer could hire a man for farm work at from \$15 to \$20 a month, while today they are paying from \$60 to \$75 per month for farm laborers.

The motor truck manufacturers of America are face to face with the fact that not only does the farm offer the greatest potential market for their output, but it is their patriotic duty to quickly learn the needs of the American farmer and produce and equip a motor truck that will most efficiently and economically serve the needs of the agriculturist.

Volumes of evidence are available to prove that wider acreage can be more intensely and scientifically cultivated by the installation of power than by horses and mules. It is cheaper to feed gas, or even alcohol, to the internal combustion engine, than it is to feed corn, oats and hay to horses and mules.

On farms that are properly motorized, increased acreage can be handled and increased yields secured.

If the proper preparation and seed bed is made for corn, and it is cultivated at the right time, it is as easy to produce a 60-bu. to the acre crop of corn as it is a 30-bu. to the acre crop, and the only added cost is that connected with the harvesting of the additional 30 bu.

The cost per bushel of producing a 30 bu. to the acre crop of corn in the middle states is 34 cents, while the cost per bushel of a 60-bu. per acre crop of corn is 21 cents per bu., and not only has the farmer the added 30 bu., but he has an additional 13 cent per bu. profit.

The American farmers are buying 250,000 stationary gas engines annually, and from 50 to 75 per cent. of these engines could be eliminated if the tractor and truck were adopted. Sixty per cent. of the passenger automobiles in the United States are owned and driven by farmers, and if there is a reason for this condition there is the greater need for the truck.

It is interesting to note that in the month of January, 1919, over 21,000 head of hogs were transported by motor truck to the slaughter pens in Omaha, Neb., and if you gentlemen will go to Indianapolis, Ottumwa, Sioux City, St. Joe, Kansas City and other such packing centers, you will find that the same condition maintains as chronicled in connection with the Omaha market.

There are sections of the country where the motor truck has already become exceedingly popular among the farmers in spite of the lack of interest among the truck manufacturers as a whole, so far as the farmer was concerned.

Farmers Are Mostly Cash Buyers

Over 2000 motor trucks were sold to farmers out of truck agencies operating in Sioux Falls and Sioux City in 1918, and less than 5000 trucks were sold in greater Chicago. The dealers interested in the sale of the 2000 trucks to the farmers in the first instance were only about one-fifth in number as compared with the dealers who were endeavoring to make a profit out of the sale of less than 5000 trucks in the city of Chicago, and again you will find that the dealers selling the truck to the farmer in nearly every instance got the list price, while the dealer in the municipality is face to face with the greatest crime in the truck business today-that is price cutting.

There are three methods of transportation recognized today—highways, railways and waterways. We, at this convention, have had eloquent addresses as to the limitations of the railways and waterways and the subject of the broader field on the highways has been touched on so eloquently that I shall not dwell further here.

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At a recent assemblage of representatives of the Central Electric Railway Association, at Cleveland, O., an entire morning was devoted to the subject of "How can the electric railways compete with motor trucks?" and there it was admitted that unless something could be done immediately in Indiana, Ohio and Michigan by the electric railways the motor truck would practically eliminate the possibilities of these lines being operated on a profitable basis.

The principal reason for this is that if the motor truck is properly equipped it is capable of going into the field of the producer and delivering the merchandise to the consumer in the cities, while in a case of waterways and railways they must be served both between them and the producer, as well as consumer, by either teams or motor trucks. In other words, the motor truck is a complete method of transportation, while the railway and the ship only partially completes the job.

We cannot refrain from touching at this point on the subject of proper tire equipment for trucks on farms and highways, and there is available abundance of information which proves that from a comparative standpoint the motor truck equipped with solid tires is operating on the farm only about 25 per cent. efficient, as against the pneumatic equipped truck.

One concrete illustration of this fact may be interesting. Your humble servant, in going from New Ulm, Minn., to Minneapolis, in the month of January of this year, overtook a 2-ton truck equipped with pneumatic tires. truck was carrying an over-load. The driver slipped into a mud hole, and due to inexperience in driving, spinned his rear wheels until the differential settled into the mud. Upon being advised to get off the truck and let air out of his tires until they were carrying only about 50 to 60 lb., and by starting the engine slowly and not spinning his wheels, and as a result of the tires flattening out both sidewise, as well as forward and back, the truck was pulled out on to terra firma without the slightest slipping of the wheels, and then the pump was connected to the tires and the man was on his way rejoicing. This result could not have been possible with solid tires.

When the longer life of the truck, the

saving in fuel, lubricant and repairs is taken into consideration and properly presented by your representative to the farmer buyer, it seems that the question of the small increase in original cost of pneumatics over solids should be easily overcome.

As a result of the labor problems, the agricultural colleges throughout the country are holding classes every winter which are filled by farmers ranging from 15 years of age to 55, who are there with the realization that they must study from a scientific standpoint the application of the tractor and the truck to their present day needs, and if the truck manufacturers of America will show the proper spirit of co-operation in connection with this market, the question of sales resistance will be materially eliminated.

In closing, permit us to suggest that an investigation on the part of the truck manufacturer will prove conclusively that as a whole the farmers have the cash with which to pay for the truck, and in instances where they might need accommodations they can be secured from their local banker with much less trouble than in any other field of activity.

What is the Future of the Farm Tractor on the Motor Truck Industry?*

THERE is a close tie of relationship between the motor truck and the farm tractor. In the motorization of the farm each is supplemental to the other. No farm can be completely motorized which does not have both a truck and a tractor. The tractor increases farm production and at the same time lowers production costs. The truck effects similar savings in marketing the products of the farm.

The same machine which plows and seeds the fields and harvests the crops will not transport these crops to market economically, except perhaps, under a few unusual and extraordinary conditions, which are such isolated cases as not to require attention here. This, notwithstanding the fact that much engineering and manufacturing talent is being wasted in this belief.

The greatest potential market for trucks is the farm. This market may be slower in development and require more educational work than some others, such as the industrial and commercial, but in the long run will be the greatest and naturally, therefore the most profitable. This is probably particularly true of the smaller sizes, that is, sizes ranging up to two-and-one-half and perhaps three tons.

Assuming that the farmer is going to be the big purchaser of trucks, the problem becomes one of getting the trucks into the farmer's hands. * * * The question becomes one then of selecting the best available dealer. * * * Selling trucks bears a closer relation to selling tractors than to any other line of retail

merchandising. In selling either line, the successful dealer is selling an idea rather than a machine. Selling tractors is selling the power farming idea. Selling trucks is selling motor transportation. The sale of the machine in either case is just an incident. The machine is merely the concrete mechanical development of the idea. In neither case will the sale be made until the idea has been driven home.

Some Requirements for Success

Thus we can readily see that with the same sales methods required and the same qualifications necessitated in the dealer, that the dealer who is successful in one line is likely to succeed in the other. If he is successful in either line it is because he understands and appreciates the fundamental principles which underlie the sale of either a tractor or a truck. In either case he is selling on the basis of utility, and the same intelligence which makes him successful in selling one line almost invariably assures his success in the other.

There is another way in which the tractor dealer possesses an advantage in selling trucks, the same advantage the truck dealer would have in selling tractors. Both appeal largely to the same prospective customers. Acquaintanceship is a big sales factor, especially in a small community. As long as a farmer receives fair treatment he will supply all his needs from that particular dealer while that fair treatment continues. ***

The dealer who sells both lines has the opportunity of using one line to help the sale of the other. The farmer perhaps realizes the need for a tractor, or the need of a truck. He isn't yet in the frame

of mind where he realizes that he should have both. He hesitates to buy a tractor because he feels that he will have to keep a large number of horses for moving his supplies to market and transporting supplies to his farm. Or, he may appreciate the need of a truck, but hesitates because he can't reduce the number of horses because of their necessity for field work. The dealer already has the farmer partially sold on the one line. By showing the farmer where he can use the two lines together and dispense with nearly all of his horses by buying both a truck and a tractor, the dealer has a strong argument in favor of a dual sale.

In the average small town community neither the truck nor the tractor business is as yet an all-year-round business. The farmer may buy a tractor in the spring, or in the winter wheat belt, he may wait until June or July. Nearly all tractor sales are made within the season marked by a comparatively few months.

The farmer, as a general proposition, does not face the need of a truck for marketing his crops until he is virtually through with his tractor. Then the truck dealer's opportunities start. The tractor selling season is over; the truck sales season is just starting. The two overlap but little; rather, they dovetail, making the combination of the truck and tractor dealer more of an all-year proposition from the standpoint of sales.

Of course, there are some exceptions to these general conditions. There are certain kinds of farms, relatively few in proportion to the total number, where the use of trucks is more of a daily than an all-year necessity. I have been speaking more of the conditions which obtain

^{*}Extracts of paper read by Howard E. Everett, Managing Editor, Chilton Tractor Journal, before National Association of Motor Truck Sales Managers.

throughout the greater part of the country.

Outside of the farm trade the small town dealer has his sales opportunity. The dealer selling tractors frequently increases his volume by the sale of a tractor to a township or county for road building work. This same dealer can bid for truck sales to rural express lines which are bound to be organized cooperatively in the farming districts. There is also the opportunity for selling trucks to other merchants who are rapidly expanding their delivery service into the territory surrounding their towns.

One Line Helps the Other

There have been innumerable instances of dealers making great sucesses in handling both lines, who attribute their success to the combination. Several dealers in the Middle West have increased sales and taken care of service satisfactorily because one line helps the other. Many dealers have found it advisable and productive of highly satisfactory results to load tractors on trucks and go out on demonstration trips, from farm to farm, demonstrating either as the occasion warranted and possibility of sale suggested. The quick delivery of tractors which the truck makes possible has definitely made many tractor sales.

The helpful influence of the sale of one line upon the other has been shown many times. Farmers have bought tractors to increase their yields where motor express lines have been established. With better marketing facilities there is a greater incentive to increased production. The price of wheat won't always be guaranteed at \$2.26 a bushel, and other farm products won't always be as high as they are now. There will be fluctuations in the prices of all farm products and the farmer will be watching the market carefully. A small fluctuation in the price of grain or live stock is a matter oftentimes of hundreds of dollars. This will mean much more to the farmer with a tractor whose yields have been increased by its use. The truck with its facilities for rapid marketing will enable him to take quick advantage of favorable market conditions, and will enable him to make certain the benefits which the tractor makes possible.

Sales is but one phase of the subject. Whenever tractors and trucks are in use there will be a demand for service. This is one of the bugaboos of the dealers in both lines. Good service men are hard to get, and harder to keep. The strongest inducement which can be offered aside from wages is the matter of permanent employment. The dealer who can keep service men busy the year around will be able to get better men, give better service and have more satisfied customers.

Under the present conditions many tractor men are having trouble with service. Many of them are unable to give much at all. The farmer is compelled to go to the local garage, which is not apt to be very satisfactory. The requirements of truck and tractor service are not dissimilar. The combination truck and tractor dealer is able to ren-

der better service than the exclusive small town dealer in either line.

In the matter of carrying extra parts and re-equipment, the combination dealer has an advantage over the dealer handling either line alone. Parts which relate to the power plant, ignition, carburetion, cooling, etc., are quite largely interchangeable. Consequently, the dealer handling both lines can meet demands with a smaller proportionate investment, and will have the satisfaction of a more rapid turnover.

The close relationship between the truck and tractor might suggest a still closer association at the factory. Few companies thus far are manufacturing both trucks and tractors, but there are indications that many will be before a great while. Several truck makers have successfully experimented with tractors and are getting into production. Their standing in the truck industry is sufficient to assure their being factors in the tractor field. One large company has long been a successful manufacturer of both lines, and has marketed both trucks and tractors through the same distributor and dealer organization with marked

Possibilities in Manufacturing Both Lines

Considered from a manufacturing angle there seems to be on the surface at least, little reason why the same company could not produce both lines. Both machines are alike in that they are built for hard service and rough knocks. Of course, different equipment, different manufacturing processes and different factory organization would be employed. But the engineering department would be largely the same. The two lines could be marketed through the same factory branch and distribution organization, and could reach the same ultimate user through the same dealer or agent.

The dealer doubtless would prefer to handle the truck and tractor lines produced by the same organization, than to be handling the products of two different factories. Dealers prefer to be quantity buyers, realizing that as such they receive more consideration, more sales help and encouragement and more help of various kinds in times of need than those who buy a little here and a little there. It means bigger discounts and a more profitable and satisfactory business.

Finally, with a close relationship existing between the two products in the engineering, manufacturing, sales, service and consumer ends of the industry, it would seem that the tractor dealer is destined to play a prominent part in the future of the truck industry, excepting, of course, in the large industrial and commercial centers, which are a different proposition, and which have sufficient business at all times of year to justify an exclusive truck dealer.

"Build now the National, State, and County roads we need and prosperity will ride to every American's gate." WILLIAM C. REDFIELD Secretary of Commerce

"One Day" Reciprocal Clause Destined to Cause Trouble

The probability of a serious clash of authority between the motor vehicle officials of New Jersey and of Pennsylvania, is seen by the legislative committee of the Motor Truck Club of New Jersey, should the motor truck bill, now before the Pennsylvania Legislature, with its clause limiting the travel of out-ofstate motor trucks to but one day a month in Pennsylvania, without a Pennsylvania license, be passed.

The Motor Truck Club of New Jersey has already sounded a warning anent the matter. Secretary Alfred D. Way, Jr., of the club, has taken the question up with State Motor Vehicle Commissioner William L. Dill, of New Jersey, and the Motor Truck Club of Philadelphia and the Motor Truck Owners' Association of the same city in an effort to have the "one day" clause removed, and the general reciprocal provisions of the present motor vehicle laws continued.

Should the bill become a law it will seriously affect the inter-state motor truck freight and express service which has become very extensive, with Philadelphia as a center, and the same can be said of the transportation of farm produce between points in New Jersey and Philadelphia.

Pennsylvania now has a reciprocity act which allows trucks or passenger cars to travel in that state for as long a period as those states allow Pennsylvania cars to run in their commonwealths. In the case of New Jersey, this privilege is extended to fifteen days, but as the law is flexible no real hardship is placed on car or truck owners. But, if the "one day a month" clause is enacted, New Jersey will immediately shut down on Pennsylvania cars and trucks as it did on New York and Maryland trucks during the controversy regarding reciprocal privileges between New Jersey and each of those states.

Facts Pertinent to the Good Roads Movement

In 1918 automobile manufacturers paid a total of \$33,000,000 in taxes to the Federal Government. In the same period car owners paid \$50,000,000 in motor registration fees to the states. Total automobile taxes including the personal property, excise, local charges, etc., for the year are estimated at \$150,000,000. The charges will reach \$200,000,000 in 1919. All of these are paid by car owners in the last analysis, making a total charge of \$25 per car for 1918.

Against this it should be noted that of the 2,500,000 miles of highways in the United States but 6250 miles are equal to the demands of heavy duty traffic and this mileage is made up of loose, unconnected links.

It would appear from this that the needs of the car owner have not been considered in highway construction, yet his taxes amount to a sum equal to more than half of the total road expenditures in the United States for any single year. Evidently a national policy is needed.

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News of the Trade in Brief

Agricultural Department Now Has War Trucks

WASHINGTON, May 7.—About 20,000 trucks, valued at more than \$45,000,000, have been turned over to the Department of Agriculture by the War Department. These trucks, a great number of which are new, are part of the surplus left on the hands of the War Department at the close of the war.

They are to be distributed to the various state highway departments through the Bureau of Public Roads, under a provision of the Post Office appropriation bill, and must be used on road construction work.

More Road Projects Approved in April

WASHINGTON, D. C., May 10.—During April the Secretary of Agriculture approved project statements for 120 Federal Aid projects, involving the improvement of 923.53 miles of road at a total estimated cost of \$16,261,326.51, and on which Federal Aid in the amount of \$7,528,550.68 was requested. This represents the largest number of project statements approved, the largest total estimated cost, and the greatest amount of Federal aid requested during any month since the passage of the Federal Aid Road Act, March, 1919, had surpassed all records in these items up to that month.

During April there were executed by the Secretary and the several state highway departments 55 project agreements involving the improvement of 521.51 miles of road at a total estimated cost of \$4,626,415.48, and on which \$2,039,614.99 Federal aid was requested and set aside in the Treasury. In addition, agreements to cover 72 other projects were placed in process of execution during the month.

Up to and including April 30, 1919, project statements for a total of 1057 projects had been approved, after deducting all approved projects cancelled or withdrawn by state highway departments. The 1057 projects involved 10,580.17 miles of road, a total estimated cost of \$92,933,121.81, and a total of \$36,576,857.48 Federal aid. On the same date a total of 535 project agreements had been executed, involving 4,624.83 miles of road, a total estimated cost of \$39,059,327.44, and a total of \$15,614,929.61 Federal aid.

Continental Guaranty Corp., New York City, announces that the board of directors of the company has declared a dividend of 2 per cent. on the capital stock of the corporation, payable May 2, 1919, to stockholders of record April 29, 1919.

Federal Aid Construction Lagging

The Highway Industries Association, in a recent paper, calls attention to the progress or lack of progress in the road movement. The association points out that on February 21, 1919, a total of 841 projects had been approved by the Secretary of Agriculture, calling for the improvement of 8615 miles of roads. This approval was of the general outlay and not of the plans and specifications made after careful surveys and plans had been completed.

The total number of projects approved as given above, after having plans and specifications submitted, amounted to 431, approximately 50 per cent. of the total number submitted by the states. On the first of January, 1919, only 316 of these 841 projects submitted had actually been placed under construction or completed, being only 371/2 per cent. of the gross number applied for. The 316 projects under construction on January 31 involved an outlay from the Federal Aid Fund of \$8,382,067. There had been completed and accepted on January 1, 1919, about fifty miles of Federal Aid Roads, and the gross amount that had been paid out by the Treasurer on the warrants drawn by the Secretary of Agriculture for all work under the Federal Aid Act, as shown in the report of the Secretary of Agriculture of November 15, was about \$424,445, and it is estimated that an amount not exceeding \$2,000,000 will have been expended from this fund by July 1, 1919. There will be available to the states on that date \$77,600,000. At this rate of expenditure of approximately \$2,000,000 in two years, \$1,000,000 per year, it can be readily seen that at the present progress being made in Federal Aid Construction it will take 77 years before the states use up their allotment available on July 1, 1919, or, eliminating one year due to war conditions, and say that at the present rate of progress in Federal Aid there will be expended \$3,000,000 per year, it will take approximately 29 years before the states will use up the allotment available on the date given above. The total amount available to the states at the beginning of the fiscal year 1921 will be \$266,750,000, and with the progress heretofore indicated, it will take about 90 years before the allotment is used up by the states.

To summarize, there will be available on July 1, 1919, \$77,600,000 and the gross amount that will have been expended from this fund will not exceed \$3.000,000, thus showing that it will take 29 years to use up this allotment at the past progress. There will also be a total allotment available for states, beginning with the year 1917 and running to the year 1921, of \$266,750,000, and if it is

used at the rate of expenditure up to January 1, 1919, omitting one year due to war conditions, it will require approximately 90 years to use up this total allotment. There is a great deal of talk of the prospective work, but there is not a great amount of actual construction going on, and it is absolutely necessary that more speed should be made that the amount of money which has been, and will be alloted by the Federal Government, may be used promptly.

Let us have improved roads during this generation, especially when the money is available for their construction.

Government to Picture Highway Development

Officials of the visual instruction section of the Department of the Interior are perfecting plans for an international distribution of slides and motion pictures depicting road construction and the benefits to be derived therefrom.

The work is under the supervision of F. W. Reynolds, associate director of the educational extension division, who is assembling as his aides some of the best known authorities in the United States in all branches of visual instruction, from the first preparation of the film to its introduction to the smallest school, church or club in the smallest community in the country.

It is planned to interchange highway reels with Great Britain, France and other countries. Arrangements have already been perfected for distribution of these films and slides in twenty-five states.

Jobbers Complete Plans for Convention

CHICAGO, May 1.—Arrangements have been completed for the meeting of the Automotive Equipment Association at Hot Springs, Va., April 4, 5, 6 and 7.

A joint meeting is planned for Wednesday morning, June 4, followed by separate meetings in the afternoon, when the jobbers will meet in the Assembly Hall and the manufacturers in the Casino. All sessions thereafter will be held in the morning, and the afternoon will be devoted to various recreation.

Clinton to Make New Truck

DETROIT, April 16.—The Clinton Motor Truck Co., which was in production before the war, but suspended manufacture owing to the scarcity of materials, is planning to manufacture a 1-ton truck of a new design. The main plant will be located in Cleveland, as most of the materials used in making the truck are produced in that vicinity.

Highways Transport Committee Metropolitan Section of S. A. E. Announces New Policy

WASHINGTON, April 23. - Grosvenor B. Clarkson, Director of the U. S. Council of National Defense, announces a reorganization of the Council's Highways Transport Committee.

In harmony with the Council's reorganization to a peace-time basis, the work of the Highways Transport Committee has been broadened to include direct representation from the office of Public Roads and Rural Engineering, of the Department of Agriculture; the Bureau of Markets, of the same department; the Post Office Department, and the Department of Commerce.

With this reorganization, close cooperation with the executive departments most vitally interested in matters of highways transportation will be brought about in such a way that the committee will be a clearing house of action for all federal interests concerned.

The committee as reorganized consists of the following:

John S. Cravens, of the Council of National Defense, chairman.

James I. Blakslee, Fourth Assistant Postmaster General.

J. M. Goodell, consulting engineer, office of Public Roads & Rural Engineering.

James H. Collins, investigator in Market Survey, Bureau of Markets.

R. S. MacElwee, second assistant chief, Bureau Foreign & Domestic Commerce.

Charles W. Reid, executive secretary. Grosvenor B. Clarkson, Director of the Council, ex-officio.

The committee will be assisted by the Highways Transport Committee Advisory Board, consisting of:

William Phelps Eno, of Washington, D. C.

Prof. Arthur H. Blanchard, of New York.

C. A. Musselman, of Philadelphia. Raymond Beck, of Akron, Ohio. John T. Stockton, of Chicago.

The Council, in addressing itself particularly to the problems growing out of the entrance of the motor truck into the commercial transportation field, will seek to determine just how the motor truck can best be fitted into the nation's existing transportation agencies.

It is the policy of the Council, through its committee, to co-operate with all transportation agencies with the view of determining how transportation needs can be served most efficiently, speedily and economically, and to aid in the promotion of motor express lines through rural communities which now do not have adequate transportation.

The Council will, Director Clarkson stated, co-operate with the United States Railroad Administration in the study of the short haul problem, and will also give specialized attention to the relation of the Rural Motor Express to interurban electric lines and waterways traffic, in the interest of all elements concerned.

Elects Officers

The scope and limitations of the present designs of heavy oil engines was the chief point of discussion at the recent joint meeting of the Metropolitan Section of the S. A. E., and the New York Section of the American Society of Mechanical Engineers. The question of the advisability of adapting the engine to the fuel or the fuel to the engine, and a discussion of the economics of the situation with relation to the supply of different grades of fuels, etc., proved drawing cards to the automobile engineers. The greater part of the evening was given over to a review of the heavy oil types

Dr. Charles E. Lucke, Dean of the School of Mechanical Engineering, Columbia University, presided and pointed out the advantages of the Diesel, semi-Diesel and other types of heavy fuel engines over the automobile designs. stated that, if the engineer should design and develop an engine to operate satisfactorily on a very cheap fuel, the chemist, in all probability, would devise a little better fuel for the same engine that could be sold at a great deal higher cost.

Representatives of the heavy oil engines spoke of the progress made in motor-ships during the war, and some criticized the United States Shipping Board for not employing them more extensively and for the methods used with the few that were employed.

A representative of the Bureau of Mines said that the gasoline production for 1919 amounted to 3.6 billion gals.. according to preliminary estimates, that kerosene production was 1.8 billion gals., and fuel oils 7.3 billion gals.

J. H. Hunt, experimental engineer, Dayton Laboratories Company, described the experiences of his department in analyzing the troubles resulting in engine operation with the present heavy Research work showed that the "knock" was not a knock due to preignition, as is commonly supposed, but to the formation of detonating compounds within the mixture after combustion is well under way.

The election of officers of the Metropolitan Section of the S. A. E. for the ensuing year resulted as follows: Chairman, A. C. Bergmann; treasurer, L. N. Miller; secretary, A. M. Wolf. Board Miller; secretary, A. M. Wolf. Board of directors, Alfred Reeves, Henry Cranand C. W. Diffin.

Louisville Truck Dealers Form Association

LOUISVILLE, KY., April 19.-Truck dealers of Louisville met this week at the office of the Southern Motors Co. and organized the Louisville Motor Truck Dealers' Association. Walter Dix, head of the truck department of the Southern Motors Co., was elected president; Arthur C. Weber, of Jacob Weber's Sons, vice-president; Ed Andriot, of P. M. Andriot & Sons, secretary, and Chester P. Wilson, of the Chester P. Wilson Co., treasurer. Fifteen dealers and distributors were enrolled as members.

N. A. C. C. Appoints Truck Committees

NEW YORK CITY, April 16.-The question of further standardization of trucks was discussed at a recent meeting of the National Automobile Chamber of Commerce and a committee has been appointed to consider the matter in cooperation with the Society of Automotive Engineers. The committee consists of: D. C. Fenner, chairman (Mack); Francis Davis (Pierce-Arrow), F. A. Whitten (General Motors), E. M. Sternberg (Sterling), F. F. Beall (Packard).

The feeling that it might be time to revise the Standard Service and Standard Repair Parts Policies as they relate to trucks, resulted in the appointment of a committee to take charge of this matter, as follows: E. T. Herbig, chairman (Service); F. H. Drew (Packard), W. M. Ladd (Pierce-Arrow), A. B. Cumner (Autocar), F. H. Harris (Republic).

To better care for the increasing activities of the truck makers and enable them to work in still closer co-operation, President Clifton has appointed as additional members of the Motor Truck Committee, David C. Fenner, of Mack Bros. Motor Car Co., and R. H. Salmons, of the Selden Motor Vehicle Co. Others on the committee are: Windsor T. White, chairman (White); Victor L. Brown (Sterling), M. L. Pulcher (Federal), George M. Graham (Pierce-Arrow), Alvan Macaulay (Packard).

F. W. Fenn, who has handled the Rural Motor Express department of the N. A. C. C., has been made secretary of the Motor Truck Committee.

Operating a Co-operative Motor Truck Route

This is the title of Farmers' Bulletin 1032, issued by the United States Department of Agriculture, Washington, D. C., and which describes in a comprehensive way how "The Farmers' Co-operative Company of Harford County, Inc.," motor truck route was established in Harford County, Maryland, and how it progressed. The bulletin gives detailed information on three methods of operating motor truck routes; how the charter is arranged; how the association was capitalized; the benefits to be derived from such an organization, etc. Motor truck dealers who are figuring with clients on the establishment of a co-operative motor truck route should send for this bulletin. It contains some very pertinent informa-

Staunton-Livingston Motor Transportation Co., with headquarters at Staunton, Ill., has been organized and will operate a line of trucks for passenger and freight business between Staunton, in Macoupin County, Livingston, in Madison County, and other points ten to twenty miles distant, and which are not now connected by steam or electric lines. A certificate of convenience and necessity has been asked of the state board of public utilities, and an order will be placed for trucks as soon as permission is granted.

Motor Transport Corps to Train Highways Transport Executives

WASHINGTON, May 6.—The training branch of the Motor Transport Corps is completing plans for a course of instruction in highways transport, to be offered to reserve officers of the motor transport corps.

Officers may elect either the military or non-military course. The former gives training in military work, engineering, field work, transport corps maintenance, administration, etc.

The non-military course will include such basic studies as mathematics, English, foreign languages, etc.; manual work, including forging, pattern making, machine design, surveying, etc.; commercial subjects, such as law, accounting, public speaking, etc. An elective course, embracing such subjects as economic surveys of territories for highways transportation, operating costs of transportation units, road development, finance and history.

The Highways Transport Committee of the Council of National Defense has expressed its approval of the measure, and believes that the services of these men will be much sought after by owners of motor transport lines and by communities desirous of developing their transportation facilities in an economical and efficient manner.

Time for Filing Tax Returns Extended

Internal Revenue Commissioner Roper has announced that the time for the filing of returns covering taxes on a variety of manufactured articles, in which list are included automobiles, has been extended from April 30 to May 31. The returns should be made for the period between February 25 and March 31, and are due April 30. The tax return must include April business and taxes must be paid by May 31.

Propose to Standardize Invoice Forms

The National Association of Purchasing Agents, through its standardization committee, is endeavoring to standardize the form of bill heads or invoices. The committee suggests that date, order number, invoice number, car number and similar data be placed in some definite spot on each invoice form so that it can be found as readily as the postage stamp on a letter.

The committee believes that if one standard length of invoice form is adopted it will be far preferable from the standpoint of filing and general office use and business practice.

Dixie Auto Exchange, 119-21 Third Ave., Nashville, Tenn., has converted its garage and accessory department into a Ford service station. This company issues a monthly bulletin containing information of value to Ford owners.

Engineers to Meet at Ottawa Beach

NEW YORK CITY, May 1.—The midsummer meeting of the Society of Automotive Engineers will open June 23 at the Hotel Ottawa, Ottawa Beach, Mich. The society will have the exclusive use of the hotel, with accommodation for 700 members, several cottages adjacent to the hotel, and Waukazoo Inn, three miles from the Hotel Ottawa, with accommodations for about 200. Room reservations will be handled entirely through the S. A. E. offices at 29 West 39th St., New York, and must be accompanied by check in full payment for at least four days' accommodations. The rate per person for four days (without use of private bath) is \$28; (with bath), \$36. The rate for children under 5 years of age in room with parents, is \$12, and for children under 10 years of age, in room with parents, \$16.

Professional and recreational sessions will be held, the location affording ample opportunity for the pursuit of various

Short after-dinner lectures will be held each evening on various subjects of interest to members.

M.T. A. Urges Bridge and Tunnel Commission to Prevent Congestion at Tube Entrance

In discussing the question of vehicular tunnels under the Hudson River, Mr. T. D. Pratt, Executive Secretary of the Motor Truck Association of America, Inc.,

It is to be hoped that the engineers who will be employed to design the new tunnel to New Jersey will bear in mind the serious effect which may be caused by having the two entrances to the tube, the eastbound one and the westbound one, too close together. They should be a sufficient distance apart so that great traffic congestion will not occur at these points. Assuming that the traffic through the tunnel will be as great as that across the Manhattan Bridge, which is a conservative estimate, it will only result in establishing another bad traffic "spot" in the city such as the congestion at the Manhattan end of this bridge which is very bad; when all our efforts should be to reduce and eliminate, where possible, such spots. The Motor Truck Association intends to watch this very closely.

Manufacturers and Jobbers Warned Against Fakir

The Automotive Equipment Association, through its organ, The Leader, has warned manufacturers and jobbers that E. A. Wheatley, an employee of the Chattanooga Medicine Co., of Chattanooga, Tenn., has had letterheads printed and is writing to manufacturers and jobbers of automotive equipment, soliciting prices under the name of the Automotive Equipment Co. It is said that his purpose is to obtain dealers' prices on such things as he may require for his own personal use and that of his friends.

Prominent Place Given Good Roads Discussions at Chamber of Commerce Convention

ST. LOUIS, May 3—The keynote of the convention of the Chamber of Commerce of the United States, held this week at St. Louis, is business in its relation to the Government. The aim of the National Chamber is to draw the two more closely into understanding.

Transportation facilities are coming in for their share of attention, as both the Government and leaders in the industrial world are beginning to realize that the prosperity of the country is dependent upon its roads, railways, and waterways

The good roads committee, a recent addition to the membership of the Chamber, has done good work along these lines, its deliberations being led by F. A. Seiberling, president of the Goodyear Tire & Rubber Co., and of the Lincoln Highway Association. Roy D. Chapin, chairman of the Highways Committee of the National Automobile Chamber of Commerce and president of the Hudson Motor Car Co., is also a member of the committee.

Exporters are desirous of interesting the Chamber in the development of foreign trade. William Butterworth, president of the John Deere Plow Co., spoke on the movement now on foot for the improvement of the Mississippi Valley, and the advantages to firms shipping to South America of the improvement of the Mississippi river and its kindred streams.

Perry Appointed Manager of Trailer Association

NEW YORK CITY, May 1.—H. W. Perry has been appointed manager of the Trailer Manufacturers' Association of America. Mr. Perry has, for the past nine years, been a member of the office force of the National Automobile Chamber of Commerce. He held the offices of secretary of the Commercial Vehicle, Good Roads, Legislative and Export Committees of the N. A. C. C. and was manager of the statistical and information department. He has recently been in charge of the Washington office of the N. A. C. C.

Mr. Perry has opened offices for the Trailer Manufacturers' Association at Rooms 1203-04, 110 West 40th St., New York City.

Portland-to-Portland Highway Planned

DULUTH, MINN., April 18.—A transcontinental highway, to extend from Portland, Oregon, to Portland, Maine, is being promoted by the Commercial Club of Duluth. It will go through St. Ignace, Escanaba, Iron Mountain and Ironwood, Mich.; Ashland and Superior, Wis.; Duluth, Crookston, Minn.; Minot, N. D. The highway, it is hoped, will be marked, sign-boarded and advertised before the 1919 season opens. It will be known as the "Roosevelt Highway."

The New York Dealers Favor Used Truck Exchange

NEW YORK, May 1.—The efforts of the committee appointed by the Dealers' Division of the Motor Truck Association of America, Inc., to advise ways and means of solving the used truck problem appear to be in a fair way towards success, judging from the support given the movement by the dealers last evening at an open meeting at which the plan was explained in detail by Mr. Bond, counsel for the association.

It was the best attended meeting ever held by the Dealers' Division and 64 per cent. of those present subscribed to the stock, many taking \$1000 worth. The remainder of those present largely represented companies by proxy and it is believed that the concerns will become members of the Metropolitan Motor Truck Exchange, the plan of which for handling the used truck is described in detail elsewhere in this issue.

Several of the live wires of the Dealers' Association will devote considerable time calling on the representative dealers not already members, to enlist their support.

Headlight Law to be Enforced in New York

NEW YORK, April 19.—Secretary of State Hugo is sending lists of the fifty-one lenses and light controlling devices for eliminating headlight glare, thus far approved, to the chiefs of police, justices of peace and all other officials, asking for a strict observance of the law. Troopers of the state police have received orders to note cars operated with glaring headlights.

Prediction is made that within 30 days all cars will be equipped with non-glaring devices in conformity with the law.

A Solution of a Vital Problem for the Manufacturer

Many manufacturers are handicapped at times by a shortage of factory space, or equipment of some kind, or of skilled labor necessary to get out their product on time, and consequently suffer a loss of sales or a limiting of their output which cuts quite a figure on their ultimate profits.

A remedy for this condition can be found by consulting the "Contract Work" section of the CHILTON AUTOMOBILE DIRECTORY. Under this head, and also under the heads enumerated under "Automobile Parts Made to Order" will be found concerns with all kinds of equipment to help out in such cases. There are also a number of announcements of concerns who are anxious to get in touch with those manufacturers who used help of this kind, so that very little time need be wasted in correspondence. Our advice is, by all means consult the CHIL-TON AUTOMOBILE DIRECTORY, and thus add thousands of square feet to your factory and hundreds of skilled mechanics to your productive capacity.

Georgia Demonstration Creates Greater Interest in Highway Motor Transport

In the recent motor truck demonstration, which was held at Macon, Ga., for the purpose of showing the merchants, manufacturers and farmers that they can ship to outlying districts of Macon, in less time than by common carrier, it was also noticed that pneumatic tired trucks were very much in evidence. During this demonstration about 100 tons of merchandise were carried on four truck trains to points within 50 miles of Macon, whereas it would have required between three and five days to transport the same tonnage by railroad. Merchandise of all kind was transported, including meat, groceries, hardware, lumber, etc. This demonstration was carried out under the auspices of the Chamber of Commerce at Macon and once again successfully demonstrated that motor trucks are a positive factor in the transportation problem of this country.

In connection with this demonstration, the Goodyear Tire and Rubber Co. of Akron, O., which, for two years, has been operating an express route between Akron and Boston, determined to send two of its big pneumatic tired trucks to participate, and these trucks were dispatched overland to take part in this demonstration.

The route followed took the trucks through Cincinnati, Louisville, Nashville, Chattanooga and Atlanta, the greater part of the trip being over the Dixie Highway from Cincinnati. The 712 miles between Akron and Nashville were covered in 50 hours, total elapsed time, or 37 hours and 7 minutes, actual running time, the rate of speed maintained being 19 miles per hour.

Because of bad road conditions on the usual route between Nashville and Chattanooga, caused by heavy rains, the trucks were compelled to make a detour through Alabama, which added 300 miles to their mileage. In Chattanooga and Nashville truck demonstrations were made for the benefit of local dealers.

The arrival in Macon was made on the 8th day after leaving Akron, and a delivery of Goodyear tires made to a local dealer in two weeks' faster time than is usually made in railroad freight delivery.

In the big truck hauling demonstration at Macon, one Goodyear truck hauled a five-ton load from Macon to Barnesville, while the other truck transported a like load to Monticello, a distance of about 40 miles in both cases.

The appearance of these two big freighters in the towns visited was the signal for the gathering of an interested crowd, for this was the first time that trucks of this size on pneumatic tires had been seen in this section. The big 44 x 10 pneumatics on the rear wheels withstood a good deal of poking and kicking from curious people who took this means of proving to themselves that the tires were really pneumatics.

The remarkable trip of these trucks without mishap, and with only one tire change, is the best kind of proof of the practicability of motor truck transportation with large trucks on pneumatic tires, as far as road conditions are concerned. In fact, so complete has been their success on this southern pilgrimage, that in response to requests from many sources, the trucks will stay in the South indefinitely, demonstrating the feasibility of motor truck hauling.

B. S. Walter Will Distribute Noble Trucks

B. S. Walter & Sons, LaGrange, Ind., will distribute Noble trucks in twenty-one counties in the state of Michigan, and three counties in the state of Indiana. This company has about twenty-five agencies in this territory, which includes such towns as Jackson, Battle Creek, Kalamazoo, Grand Rapids, Lansing and

Corbitt Motor Truck Co., Henderson, N. C., announces the opening of an export department at 66 Leonard St., New York City, with Charles G. Jerosch as manager.



Delivering a Consignment of Goodyear Tires From Macon to a Dealer in Fort Valley, Ga. Part of the Motor Truck Train Enroute From Macon to Montezuma, Georgia.

SHIP



EDITORIALS



Price Cutting Will Wreck Motor Transportation Companies

GREAT many motor transportation companies doing overland hauling, especially between some of the large eastern cities, will either have to mend their ways or go out of business. Incidentally, quite a number of such companies have failed within the past few months, not because business in motor truck hauling slackened temporarily, but mainly on account of price cutting. Although the return load idea is blamed partly for this, the real reason is that too many concerns are trying to do business over the same route, with the result that there is not enough business to keep all of them going. Some of the smaller concerns started to cut rates, thinking that this would get them the business. It did, for a while. Then the larger companies began to cut prices, with the result that now some of these companies are attempting to haul at rates which are positively too low, considering the big overhead they carry. Probably this condition will be the means of quickly stabilizing the overland hauling business, for the simple reason that the concerns persisting in price-cutting will not survive.

It would seem that, under these conditions, it would be well for these companies to get together and agree on a price which will produce a fair profit. The trouble with some of these concerns is that they are totally ignorant of the expenses and costs of doing business. What they should do is to figure out accurately what it costs them to do business, allow a fair profit, and then stick to their prices. In no other way can they hope to survive.

It would also be well for truck dealers to familiarize themselves with this field so that they will not aggravate the condition by selling prospects that intend operating over routes already crowded.

Practical Grain Hauling Body Needed

ACCORDING to the Grain Dealers' Journal there are about 26,000 grain elevators in this country, which are equipped with what are known as wagon sinks or chutes, into which bulk grain is dumped from the tail end of the wagon boxes, or, as the automotive man would call it, the wagon body. In front of this sink is a wagon dump, a sort of balanced runway onto which the wagon is backed and tilted, after which the grain is dumped quickly into the chute. The dump logs or runways are neither strong enough nor long enough to handle the heavy motor trucks.

At the present time much grain is hauled to the elevators in bags, the unloading of which, however,

causes so much delay that the grain dealers discourage it, as it delays the unloading of wagon grain by congesting the driveway and throws some of the business to the other elevators. It is claimed by those in the grain business that the mechanical dumping devices which are attached to the trucks are, as a rule, too expensive to interest the farmer and some of them make a material reduction in the carrying capacity of the truck and are, therefore, not desired by the farmer who hauls his grain long distances. Furthermore, the elevator operators say they cannot afford to overhaul their entire plant to accommodate the farmers having trucks and make a private driveway for them to unload their grain.

In analyzing this situation, it appears that what is needed is a simple, inexpensive, rear dumping body, equipped with a hand hoist. Here is an opportunity for the body builders and the hoist manufacturers to get together and design a dumping body which would be quick acting, inexpensive and so constructed as to be suitable for other uses without adding greatly to its cost. By providing quick devices for discharging bulk from the truck body, the truck maker will make his product more useful to the farmer and more desirable, because the truck can be kept moving a greater percentage of the time.

Largest Potential Market for Motor Trucks is in the Agricultural District

AT the recent convention of motor truck sales managers, held in the city of Philadelphia, a great many interesting subjects were discussed. One that was brought most forcibly to the attention of the sales managers was the subject of motorizing the farm—it being the belief of many who addressed the members that, in the agricultural districts, so far as selling motor trucks is concerned, the surface has barely been scratched. The reason given for this condition is that the majority of truck dealers have not, as yet, visualized the possibilities of truck sales in farming communities. Too many of them are apt to wait for the prospect to come into their establishments, rather than go out into the territory and sell the farmer on his home ground.

If these dealers would realize that there is still a great dearth of labor on the farms and that the farmer has, within the past four years, made more money than he ever dreamed of making, and that the farmer actually has the cash, such dealers would probably come out of their trance and go after the agricultural prospect.

Concrete evidence as to why the agricultural districts present the largest potential market for the

sale of trucks is seen in the increase of bank clearings in towns which are the centers of the more important agricultural districts. A recent report of the bank clearings, for the country at large, showed a decrease of \$250,000,000 over the same period last year, whereas the increase during the same period in towns which are the centers of the more important agricultural districts totalled more than \$46,500,000. In a recent report of the deposits made in country national banks, the increases, over last year, ranged anywhere from \$12,000,000 for the State of New York up to \$45,000,000 for the State of Iowa.

And here is another thing to think of—and that is the wheat crop. The Government's April report on winter wheat shows that the yield will be something like 837,000,000 bushels, or an excess of 248,000,000 bushels over last year's crop. Should the country raise a spring wheat crop of 300,000,000 bushels, the total yield would exceed 1,100,000,000 bushels, having a valuation of approximately \$2,-500,000,000, which is the greatest single factor toward continued prosperity in the United States. This country is still pre-eminently an agricultural nation and has never yet suffered from hard times in a year of bumper harvests.

Isn't it high time that the dealer and truck manufacturer go out and sell their product in the districts where there is the greatest need on account of shortage of farm labor, and where there is the greatest cash with which to pay for the manufacturer's commodity? "It is the early bird that catches the worm" and it will be the dealers who start in right away to get this business who will be the ones that ring up the big sales.

Firestone Branch Promotes Truck Freighting

OMAHA, NEB., May 1.-The Omaha branch of the Firestone Tire & Rubber Co. has established a Ship-by-Truck Bureau, and will act as a clearing house for all information concerning truck routes, shippers and schedules. Practically, all trucking in Nebraska is at present on the one-way haul plan, and the Omaha Chamber of Commerce, which had established a return loads bureau, abandoned the work when it proved unprofitable to the agent.

W. B. Alexander, who is in charge of the Firestone branch, will have charge of the work, and hopes to operate this two-way loads bureau successfully.

Philadelphia Has Ship-by-Truck Parade

PHILADELPHIA, April 26.-As part of the Victory Loan demonstration in Philadelphia, a parade of two hundred motor trucks was held in the central part of the city.

Each manufacturer had a separate section and the parade was headed by the Navy Yard band. The trucks, which ranged in capacity from 1/2-ton to 7-tons, were decorated with Victory Loan posters, slogans and American flags. Two trucks belonging to the Firestone Tire & Rubber Co., which had just come in from Washington, took part in the

Pulcher, Chairman of N. A. C. C. **Truck Show Committee**

Martin L. Pulcher, vice-president of the Federal Motor Truck Co., has been appointed by President Clifton, of the National Automobile Chamber of Commerce, as chairman of the Motor Truck Show Committee, to arrange for proposed exhibitions of motor trucks in New York and Chicago next winter during the same weeks as the national passenger car shows.

The Long Island Rural Express Company in Operation

NEW YORK CITY, April 29.-The Long Island Rural Motor Express Co. is operating eight Day-Elder trucks over the North Shore, South Shore and Suburban Routes. The company has been hauling flowers from the greenhouses on the south shore to the wholesale flower district in New York City.

J. Kent Warden, president and general manager of the company, states that he has found the 3-ton truck with 21/2-ton trailer the most profitable unit in his hauling business.

New Truck Line in St. Louis

ST. LOUIS, April 17.-The St. Louis, St. Charles, St. Peters and O'Fallon Express Co. has been established to operate between these four towns in Missouri. Its officers are: E. F. Humphrey and L. B. White. The company plans to open a general garage in O'Fallon, the terminus of the line, and will arrange for return loads along the routes between the points mentioned.

Coming Events

May 15-June 1—Venezuela, S. A. National Exhibit of Venezuela.

May 19—Atlantic City, N. J. 42nd Annual Convention, National Electric Light Assn., Electric Vehicle Section, Million Dollar

Electric Vehicle Section, Million Dollar Pier.

May 21—New York City. Monthly meeting Motor Truck Assn. of America, Automobile Club of America, 247 W. 54th St.

May 21—Cleveland, Ohlo. Commercial Car Dealers' Assn. Meeting. Geo. K. Wadsworth, Sec., 1316 Woodland Ave.

worth, Sec., 1316 Woodland Ave.
May 21—Philadelphia, Pa. Motor Truck Assn.
Meeting. W. H. Metcalf, Sec.
June 2—Chicago, Ill. National Gas Engine
Assn. Meeting. Hotel Sherman.
June 4, 5, 6, 7—Hot Springs, Va. Automotive Equipment Assn. Convention.
June 16-19—Detroit, Mich. Spring Meeting,
American Society Mechanical Engineers,
Hotel Statler. une 23-27—Ottawa Beach, Mich. Mid-sum-mer meeting, Society of Automotive En-

gineers.
September 22-25—Philadelphia, Pa. Annual
Convention. National Assn. Purchasing
Agents, Bellevue-Stratford.
October 15—Paris, France. International
Auto Manufacturers' Congress, Gr. Palais.

N. A. C. C. Opposes Heavier License Fees

NEW YORK, April 16.—The National Automobile Chamber of Commerce is determined to oppose increases in registration fees and will protest vigorously the enactment of any bill imposing heavier penalties upon the driving of an auto-

A bill now pending in the New York State legislature would increase automobile registration fees 100 to 300 per cent. The N. A. C. C. gives the following reasons why the bill should not be passed:

(1) It will materially hamper business in discouraging the purchase of automobiles in New York State.

(2) It unjustly victimizes the motor vehicle and discriminates against it in favor of other vehicles and other classes of property.

(3) It attempts to make motor vehicles stand the expense of all construction and improvements of roads, whereas the same should be paid out of general taxation, since everybody shares in the benefits of good roads.

(4) It will furnish only an encouragement for the legislature in succeeding years to further increase the imposts against automobiles; and

(5) Such limitation of the purchase and use of automobiles as would result

from passage of this bill would interfere incalculably with the business, convenience, educational advantages and comfort of the whole population of this commonwealth.

Pennsylvania Farmers May Get Bread and Laundry by Truck

PHILADELPHIA, April 23.-A plan which, if put in operation, would greatly aid in the solution of the return loads problem for the government parcel post trucks, is being investigated by James I. Blakslee, Fourth Assistant Postmaster According to the plan, fresh General. bread and laundry would be sent from Philadelphia to upstate distributing centers of produce and to farmers.

Trade Should Indorse the Townsend Bill

EVOLUTIONARY developments in highway transportation point the way to an enormous increase in travel over our roads," says Roy D. Chapin, in a recent bulletin issued by the Highway Committee, of the N. A. C. C. "Conservative estimates place the total passenger mileage over the highways of the country in 1918 at nearly 75,000,000 miles, while commercial haulage for motor units alone figured at 6,000,000,000 ton-miles. Both forms of transportation will grow as our highways are extended and improved. Billions of dollars will be saved in lowered transportation costs, if this improvement is conducted along sound

"Since a very large percentage of this travel is interstate in character, it becomes evident that any policy which seeks to consider states as separate units is too narrow. Further, if we are to expend the huge sums now available in the most efficient, economical and businesslike way, we must see that our highways are constructed by competent engineers who not only know how to locate highways with due regard for traffic which will be generated by them, but also with due regard for the growing requirements of that traffic. We must have a federal commission with broad powers to direct national effort and to guide state activities.

"The problem is too large, too vital, for the mere extension of Federal aid to the states. A broad national policy is needed to direct and control this powerful factor in the economic life of the United States.

"It is the consensus of opinion of authorities that Senator Townsend's measure (a digest of which is appended herewith) provides that policy.

"The enactment of this measure into law is urged as a commonsense, practical, business solution of one of the most pressing domestic problems now before the United States."

Basic Provisions of Townsend Bill, S-5626

Creates a Federal Highways Commission to consist of five members to be appointed by the President, "with the advice and consent of the Senate" to be chosen from different geographical sections of the Union and not more than three to be of the same political party. Commission to employ a chief engineer, other engineers, experts, etc.

Commission is authorized to lay out, construct and maintain a National Highway System, "to comprise not less than two main line roads in each state," entirely at the expense of the Federal Government, no work to be done in any state until the assent of the Legislature is received.

The State Highway Departments are to be asked to recommend the routes in their respective states to be included in the National System.

The Commission to determine the order in which the routes forming the

National System are to be improved and the types of construction to be used.

The National Highways must be constructed of such durable types and adequate widths of surface as will "effectively meet the present and future traffic needs."

The states must provide, without expense to the United States, a right-of-way not less than 60 ft. wide.

The Commission is to encourage and stimulate efficient transportation over all highways in the United States and to collect and publish data of benefit to the people, taking over all duties and functions of the Bureau of Public Roads of the Department of Agriculture.

The Act appropriates funds for the expenses of the Commission and for the construction of the National Highway System on the same basis of apportionment between states as that employed in administration of the present Federal Aid Act.

The states may, if they desire, themselves proceed to construct their highways forming part of the National System, the expenditures for this purpose being refunded by the Government each year as the money becomes available.

Accepts the principle of continued Federal Aid as necessary to the development of "feeders" to the main trunk highways, such work to be continued under state and federal supervision as at present.

Provides for uniform traffic regulations on national highways.

New York's Governor Favors Knight-Wheelock Bill

ALBANY, N. Y., May 5.-Those responsible for the Knight-Wheelock bill. the terms of which will require every person desiring to operate a motor vehicle in New York City to pass an examination and a road test, etc., were jubilant at the result of a hearing by Governor Smith on the measure yesterday. The governor said he would probably sign it despite the opposition by the passenger car interests, these including the Automobile Club of America, New York State Motor Federation, etc. Those who appeared in favor of the bill included the New York State Automobile Association, Magistrate Bruce Cobb, of the New York Traffic Court, and Chas. G. Bond, of the Motor Truck Association of America, Inc.

New Insurance Bills Passed

ALBANY, N. Y., April 17.—Two bills, introduced by Assemblyman Zimmerman, were passed in the Senate. These bills amended the insurance law by providing that mutual automobile fire insurance corporations and mutual automobile casualty insurance corporations each must have at least 1000 persons owning not less than 1000 automobiles, instead of not less than 1500, as at present. The bill provides that such persons must pay into the corporations at least \$5 as evidence of their good faith.

Nebraska Bills Regulate Sales of Tractors

OMAHA, NEB., May 1.—Two bills passed by the session of the Nebraska legislature just closed are of considerable interest to the automobile trade. They are House Roll No. 85 and Senate File No. 86.

House Roll No. 85 provides that no tractor shall be sold in Nebraska until a sample machine has been tested by three competent engineers of the state university at Lincoln, who shall report to the state railway commission. The commission will compare the report with the specifications and claims of the manufacturer or agent, as set forth in advertisements or in sales arguments, and shall deny permit for sale if these specifications or claims shall prove false

The ruling of the railway commission shall apply only to the particular make of machine under consideration, however, and not to the whole or other product of any manufacturer which makes other machines which do meet specifications and claims.

The commission is also given power to deny sales permit for any tractor on complaint of any two bona fide customers, properly substantiated, that an adequate service station, with full supply of parts, is not maintained within the state. The law becomes effective July 15.

The second bill, Senate File No. 86, declares the sale, trade or disposal of any automobile or tractor void unless the necessary supplies and repairs are carried at some point within the state. This measure is similar to the first, differing in that it voids the sale after consummation, as against forbidding the sale in the first instance. This law is effective July 18.

Growing Support for Townsend Bill

WASHINGTON, April 20.—The Highways Industries Association announces that 720 organizations, Commercial, National Trade and State Trade Organizations, Rotary Clubs, Travelers Protective Associations, United Commercial Travelers, Kiwanis Clubs, Transcontinental Highway Associations and State and County Good Roads Organizations, have endorsed the Chicago Highway Resolution calling for the National Highway Policy and Plan as set forth in the Townsend Bill.

Of the above organizations, 238 have already appointed Good Roads Committees to co-operate directly with the Highways Industries Association in its work for better state and national

Arrow Grip Mfg. Co., Glens Falls, N. Y., announces that it has discontinued distribution of its products in Chicago and vicinity through Carey G. Wirick & Co., and has placed a large line of goods in the warehouse of Edward Lasham Co., State & 16th Sts., Chicago, which will be under the supervision of Harry Van Horn. This stock will be invoiced direct from the home office at Glens Falls.

Service Instruction Talks Appeal to Trade

NEW YORK, April 17 .- The first of a series of service instruction talks, by engineers and specialists in the commercial car industry, was given at the April meeting of the Motor Truck Association of America, Inc. The subjects last evening were ignition and tires and were presented by Victor W. Kliesrath, chief engineer, Simms Magneto Co., and Major W. N. Britton, engineer, Kelly-Springfield Tire Co.

The Simms engineer described what was essential to the upkeep and maintenance of a magneto on a truck and explained in detail cleaning, lubrication and adjustment. He concluded with a warning against changing the factory timing of the instrument and pointed out that much of the loss of engine efficiency was due to alteration, which frequently resulted in failure, when the engine was operating under heavy loads. The automatic impulse starter, largely employed on tractors and large engines, and the progressive steps in the manufacture of a magneto were described and explained. The material and components were shown and passed among the audience for examination.

In speaking of ignition, Mr. Kliesrath said that the instrument of the future would be decidedly better and that laboratory experimentation indicated the possibility of an 11-lb. magneto against the 16- or 18-lb. types of today, and without sacrificing efficiency. The speaker also pointed out that the new engine will be of higher compression, that pre-ignition will be eliminated, that there will be a shorter timing range and that the side walls will not be unduly heated, etc.

Major Britton, after describing the curing of rubber and exhibiting samples of various kinds of crude and manufactured rubber, gave a very comprehensive account of the construction of the pneumatic tire and explained the causes of its failure. He explained deflection, pressures, etc., and gave some very worthwhile suggestions on the care of tires and alignment of wheels. Solid tires were discussed in detail, also the advantages and disadvantages of different designs and the carrying capacity. In the spirited discussion, which followed, members of the tire trade, as well as members of the association, took an active part.

The committee in charge of these meetings plans to have service station managers present at the May event to explain what is a most interesting problem to the fleet user, and that is, the maintenance, mechanically, of a truck. It is believed that some interesting instructive criticism will be made and that an exchange of ideas will do much toward educating the truck user to a more economical use of his cars.

Borg & Beck Co., Moline, Ill., announce the establishment of an executive and sales office at 914 Michigan Ave., Chicago, Ill.

National Safety Campaign to be Undertaken by Highways **Transport Committee**

A nation-wide campaign which will seek to place before the people of the country the imperative need of traffic regulations which will make safe "life and limb" on the road, will be inaugurated this month by the officials of the Highways Transport Committee of the Council of National Defense.

In preparation for the movement, a series of regulations have been drawn up which summarize the best thought of the country on the subject of safety. Hundreds of authorities have been asked to take part in the movement, including all of the national traffic associations, state highway engineers, many chiefs of police, governors, secretaries of state and other officials who come into contact with traffic problems, and it is believed that the national campaign will serve to harmonize all effort along this line.

A particular effort will be made to place basic suggestions as to safety regulations before the municipal authorities of the country with the idea that they in turn may incorporate them into the regulations governing traffic in the particular districts within their jurisdiction. work will also reach traffic over rural highways, but the congested condition of traffic in urban centers necessarily lends first importance to this phase.

Hundreds of thousands of safety bulletins will be distributed broadcast and officials everywhere will be invited to lend their aid to the effort.

It is hoped that traffic regulations can be standardized to such a degree that dangers of accident from misunderstanding of signals can be practically eliminated and injuries from other causes appreciably diminished.

So widespread is the interest in the subject that Mississippi has already adopted suggestions made by the Highways Transport Committee and incorporated them into legislation, while the committee has been deluged with inquiries about the work from numerous other sources all over the country.

German Trade Statistics Compiled by Foreign Trade Bureau

A bulletin giving statistical reports that show the lines open to development by American exporters has been prepared by the Bureau of Foreign and Domestic Commerce. The bulletin is an analysis of Germany's foreign trade from 1909 to 1913.

There are tables showing imports and exports with each country by articles, as well as total imports and exports and the trade by principal articles, arranged in the order of their importance. General statistics of population, crops and industries are included. Copies can be obtained from the Bureau of Foreign and Domestic Commerce at ten cents a copy. The title of the bulletin is "Statistics of German Trade, miscellaneous series No. 75."

Canadian Bureau Offers Its Assistance to Exporters

MONTREAL, April 25 .- The Commercial and Industrial Museum of Montreal, offers its assistance in bringing to the notice of Canadians products of American manufacture. Samples of these products are exhibited, classified, etc., free of charge.

An information bureau furnishes exhibitors with any information they may require concerning the possibilities of Canada, the state of the market, business prospects and trade opportunities, etc.

Pennsylvania Rubber Co., Jeannette. Pa., announces the opening of a branch office at Forsythe and Clay Sts., Jacksonville, Fla. Captain J. L. Branan, who has recently returned from service with the American Expeditionary Forces in France, will be in charge of the office.

Statement of the Ownership. Management, Circulation, Etc. Required by the Act of Congress. of August 24, 1912

Of Commercial Car Journal, published monthly at Philadelphia, Pa., for April, 1919. State of Pennsylvania, County of Philadelphia, ss.:

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared James Artman, who, having been duly sworn according to law, deposes and says that he is the Editor of the COMMERCIAL CAR JOURNAL, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid public. CIAL CAR JOURNAL, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are:

Publisher, CHILTON COMPANY, 49th and Market Streets, Philadelphia, Pa.
Editor, James Artman, Narberth, Pa.
Directing Editor, E. S. Foljambe, Drexel Hill, Pa.

Business Manager, C. A. Musselman, 4203 Pine St., Philadelphia, Pa.

Managing Editor, Albert G. Metz, South Ardmore, Pa.

That the owners are:

James Artman, Narberth, Pa.
George H. Buzby, Wellington Apartments, 19th and Walnut Streets, Philadelphia, Pa.

C. A. Musselman, 4203 Pine Street, Philadelphia, Pa.

A. H. Vaux, Gwynedd Valley, Pa.

That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above,

and other security holders owning or holding I per cent. or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also, that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and that this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

JAMES ARTMAN. Editor.

Sworn and subscribed before me this 25th day of March, 1919.

(Seal) (GEORGE H. SHEVLIN.

(My commission expires April 1, 1921.)

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New Truck to be Manufactured in the West

LOS ANGELES, April 25.—J. Neil Patterson, former president and general manager of the Los Angeles Trailer Co., and pioneer of that industry in the West, is organizing a new company, to manufacture 2-, 3- and 5-ton motor trucks, for the western trade, the factory to be located in or near Los Angeles.

Mr. Patterson is, at this time, in Detroit, building up his sample trucks, and expects to be under way, with trucks to deliver, within three or four months. He is still connected with the trailer company, although not actively, being at this time vice-president. Mr. Patterson has recently been discharged from the army, where he held a captain's commission in the Aircraft Production Bureau.

It is also understood that an export company has been formed by Mr. Patterson and his associates, who will soon open offices in San Francisco. This new export company will handle the sale of Patterson trucks and trailers, and a tractor line will be added later, as well as other equipment. This company will handle the exports to the Far East, and countries reached from the western coast.

M. & S. Corporation Ready for Peace-Time Production

CLEVELAND, OHIO, April 24.—The M. & S. Corp., which recently announced its reorganization, has completed the removal of its plant and equipment from Detroit to Cleveland, and will there manufacture its product, formerly known as the M. & S. differential, but recently rechristened Powrlok. The factory and general offices of the company are now located at 1107 East 152nd St., Cleveland.

The personnel of the company includes: W. T. Walker, president and general manager, formerly vice-president and general manager of the Walker-Weiss Co.; L. O. Haskins, director of sales and advertising, who has been in government service during the past two years, as captain in the Quartermaster's Corps; R. S. Townsend, factory manager, formerly connected with the Weston Mott Co. and the Walker-Weiss Co.; R. H. Goodrich, chief engineer, formerly with the Weston Mott Co., Walker-Weiss Co. and Dort Motor Car Co.

Two New Plants for L. A. Young Industries

DETROIT, May 7.—Two new plants have been added by the L. A. Young Industries, Inc., to provide for increased production. The plant formerly occupied by the Borden Condensed Milk Co. at Jackson, Mich., will be equipped for operation as a cushion spring plant. It will have 200,000 sq. ft. of floor space, five to seven hundred will be employed.

The former plant of the Marshall Spring Co., at Albion, Mich., was acquired some months ago from the National Spring & Wire Co. When running full blast this plant will give employment to six hundred men.

Ball Bearings Companies Unite

NEW YORK CITY, April 21.—A reorganization by which the products of four ball bearing companies will be sold through one central organization has been effected and the new company will be known as the S K F Industries, Inc. It will include the Hess-Bright Mfg. Co., the S K F Ball Bearing Co., the Atlas Ball Co. and the Hubbard Machine Co. The principal office will be at 165 Broadway, New York City, and branches will be located at Boston, Philadelphia, Atlanta, Buffalo, Cleveland, Detroit, Cincinnati, Chicago and San Francisco.

Officers of the new company are: B. G. Prytz, president; W. L. Batt, vice-president; J. P. Walsh, comptroller, and S. B. Taylor, sales manager.

Sheldon Axle & Spring Company Entertains Employees

WILKES-BARRE, PA., April 29.— The management of the Sheldon Axle & Spring Co., on April 23, tendered a banquet to its employees at the Hotel Redington.

Addresses were made by Thomas J. Atherton, president of the company; George M. Wall, vice-president and general manager, and by several other officials of the company. Music was furnished by the Sheldon Orchestra and the Sheldon Choral Society.

Pennsylvania Rubber Co., Jeannette, Pa., announces that, at a special meeting of the board of directors, held April 21, the eleventh quarterly dividend of 1¾ per cent. on preferred stock, and of 1½ per cent. on outstanding common stock, payable June 30, to stockholders of record, June 15, was declared.

Rubber Companies Join in Athletic League

NEW YORK CITY, April 24.—An athletic league, the aim of which is the furtherance of sports of all kinds, has been formed by the employees of various rubber companies. The rubber companies who have joined in the formation of the Rubber Industries A:hletic League, as the association is called, are: Ajax, Empire, Federal, Firestone, Goodyear, Goodrich, Globe, Keystone, Kelly-Springfield, Miller, Pennsylvania, Sterling and United States rubber companies.

Officers have been elected as follows: P. C. Botzenmayer, United States Rubber Co., president; H. A. Demarest, Goodrich Rubber Co., vice-president; J. L. Wood, Ajax Rubber Co., secretary, and B. Greene, Sterling Tire Corp., treasurer.

Cord Pneumatics on Oshkosh Two-Ton Trucks

Another indication of the fact that pneumatics are being adopted more extensively for motor trucks is shown by the announcement made recently by the Oshkosh Motor Truck Mfg. Co., of Oshkosh, Wis. This company announces that the Oshkosh four-wheel drive, 2-ton model will be equipped with pneumatic cord tires as standard equipment without extra cost. The tire equipment consists of 36 x 6-in. pneumatics front and rear. This company claims to be the first to sell a truck with pneumatic tires as standard equipment and without extra cost.

The Description of the Knox Gasoline Carburetor in the April issue, page 51, contained an illustration of the carburetor, with caption which read, "the Knox Model F Kerosene Carburetor." This should have read "the Knox Model F Gasoline Carburetor."



Transportation Economy as Practised by Gramm-Bernstein Motor Truck Company
The Gramm-Bernstein method of loading trucks onto the flat car not only doubles the capacity of
the freight car, but insures safety of transportation. Four trucks are now accommodated in the space
formerly occupied by two. By means of careful blocking and cross support, absolute rigidity is
maintained and satisfactory delivery insured.

m W

Standard Parts Building New Spring Factory

FLINT, MICH., April 17.—A large spring factory is under construction for the Standard Parts Co., at Flint. The new factory will have a capacity four times as great as that of the old plant. It is located just north of the General Motors plants, on an eleven-acre tract recently purchased by the Standard Parts Company.

The manufacturing section of the new plant will, at the outset, include three complete units. The arrangement provides for progressive operations at every point. Materials will be unloaded from railway cars brought directly into the steel shed at one end of the factory. At the opposite end finished goods will be loaded directly from shipping platform to railway cars.

Prospects Bright for the Rubber Industry

Optimism, spelled with a capital "O" permeates the rubber industry. Business on the books has never before reached such volume, and future prospects for tire manufacturer and dealer alike, were never so bright, in the opinion of Horace DeLisser, president of the Ajax Rubber Co., Inc., New York City.

"Importance of the automobile as America's secondary system of passenger and commodity transportation," says Mr. DeLisser, "has more than been firmly established. Every car that boasts of wheels and an engine is running, and is going to continue to run as long as its motor can function. Hence, tire demand is ahead of the supply. The whole rubber industry cannot produce the tires this year that will actually be needed."

Buses Go Sixteen-Hundred Times Around Earth

The remarkable record of more than 40,000,000 miles, equal to 1600 trips around the earth, has been made by the fleet of omnibuses operated in New York City by the Fifth Avenue Coach Company, all of which are equipped with Bosch magnetos.

During all of this excessive running prompt and satisfactory service was maintained by every 'bus on the force. The motor is running almost constantly in the endless series of trips up and down town in New York. Stops are made every few blocks, and in the busier sections, at every block; and while the buses stop for traffic, the motor must run idle, all of which means a strain on the ignition system. The gas consumption on the New York 'buses has been at a minimum, which is a big factor in economy of operation.

Standard Parts Co., Cleveland, Ohio, announces the opening of an office at 1006 Times Bldg., New York City, where W. A. Paxton will represent the company in the eastern territory for the Stanweld products, formerly handled in this territory by L. D. Rockwell.

Militor and Knox Consolidate

NEW YORK CITY, April 18.—A merger of the interests of the Knox Motors Co., of Springfield, Mass., with the Militor Corp. of New York, is announced by N. R. Sinclair, president of the amalgamated company. The consolidated corporation will be known as the Militor Motors Co. and will have a capital of \$2,500,000.

The officers of the consolidated company are: N. R. Sinclair, president; George W. Dunham, formerly vice-president of the Society of Automotive Engineers and vice-president of the Militor Corp., vice-president; R. L. Notman, formerly vice-president of the McKinnon Dash Co., second vice-president; E. O. Sutton, formerly treasurer of the Knox Motor Co., treasurer.

The general executive and sales offices of the Militor Motors Co. are located at 111 Broadway, New York City.

General Tire Distributor Tries Novel Advertising Stunt

AKRON, OHIO, April 22.—The Consolidated Motors Co., distributor at Houston, Texas, for the General Tire & Rubber Co., conducted recently a novel advertising campaign, in which airplanes played a part. Notice of a concert, to be given for the relief of Belgian babies, was printed on one side of a circular, and the advertisement of the Consolidated Motors Co. on the reverse side. Six De-Haviland airplanes, secured through the courtesy of Colonel Brant, commanding officer of Ellington Field, Texas, dropped 15,000 of these bills in and around Houston.

Star Rubber Expanding

AKRON, OHIO, April 20.—The Star Rubber Co. announces that it is now carrying on quantity production of Blue Ribbon cord tires.

In addition to the New York warehouse at 226 W. 52nd St., two new stores have recently been opened: one at 328 Peachtree St., Atlanta, Ga., and the other at 1922 Grand Ave., Kansas City, Mo. L. G. Darling is in charge of the former and R. I. Delayan of the latter.

and R. J. Delavan of the latter.
H. D. McGwier will cover Texas for the Star distributors.

Large Distributing Corporation to Handle Republics

SIOUX FALLS, S. D., April 21.—The Stevens Corporation has recently been organized, with a capital of \$2,000,000, to take over the distribution of Republic trucks in the states of North and South Dakota, and parts of Minnesota, Wisconsin, Iowa and Wyoming, which territory was recently allotted to the W. E. Stevens Co. Officers of the company are: W. E. Stevens, president; C. C. Holmberg, and B. J. MacMullen, vicepresidents; Ray G. Stevens, secretary, and R. B. Eldridge, treasurer.

Efficiency in the Indiana Factory

The Indiana Motor Truck Corp., of Marion, Ind., has a reclaiming department to which all material that does not pass inspection is sent for further examination. By this method it is determined whether or not the part can be used again economically after adding the cost of correction. This means a saving of needless expense in many cases, as the part is scrapped at once, if not worth further work.

This company has established a school for salesmen. It is under the direction of I. W. Kennett, and a regular course extending over a period of two weeks is given the men. A lecture course covering the design, construction and merits of Indiana trucks is followed by a written examination, after which the class is graduated.

Wheel Manufacturers Honor Thomas A. White

CHICAGO, April 17.—Wheel makers from various parts of the country gathered in Chicago last night to honor Thomas A. White, of St. Marys, Ohio, chairman of the Wheel Manufacturers' War Service Committee, and president of St. Marys Wheel & Spoke Co. As a token of appreciation of his services as chairman of the War Service Committee, the wheel manufacturers presented him with a Swiss watch at the dinner held in his honor at the Congress Hotel.

Changes in Savage Arms Organization

SHARON, PA., April 18.—A. E. Borie has resigned as president of the Savage Arms Corp., and has been elected chairman of the board of directors. W. L. Wright, formerly vice-president and general manager, succeeds him as president.

F. R. Phillips has been elected vicepresident; F. R. Pleasanton remains general works manager, and Arthur F. Hebard has been appointed general sales manager.

Boston Vim Now Separate Organization

BOSTON, MASS., April 19.—The firm of Dunbar, Sanders, Bowen, Inc., who distributed Oakland cars and Vim trucks, has decided to devote its resources and its entire organization to the sale of Oakland cars in the future. The Vim Motor Truck Co. will open and operate its own sales and service station, which will take care of Vim interests in the New England territory.

Van Dorn Opens New Chicago Branch

CHICAGO, April 30.—The Van Dorn Electric Tool Co., of Cleveland, manufacturer of portable electric drills, reamers and grinders, has opened a new Chicago office at 527 South Dearborn St. William Cottrell is sales manager at the Chicago branch.

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How to Obtain Export Information

The Bureau of Foreign and Domestic Commerce is made up of a number of divisions, each of which supplies information of a specific nature, and is quite willing to aid exporters in solving problems connected with foreign trade. The Division of Foreign Tariffs furnishes information concerning foreign tariff and customs laws and regulations, commercial policies of foreign countries, foreign trade-mark and patent laws, embargoes and import prohibitions, and foreign consular regulations. The Research Division supplies information on import and export statistics of all foreign countries; it does translating and research work of any sort connected with foreign The Division of Statistics furnishes figures on the trade of the United States with all other countries, the statistics being supplied monthly, quarterly, and yearly. The Far Eastern and Latin American Divisions provide information in their respective fields, concerning markets for American products, general trade conditions, regulations affecting commercial travelers, the industries and resources of nations, and many other matters that are related, directly or indirectly, to the sale of American goods.

The information collected by the Bureau is distributed mainly through its district and co-operative offices, its Trade Information Division, and the publications issued by its Editorial Division.

The Bureau maintains district offices in New York, Boston, Chicago, St. Louis, New Orleans, San Francisco, and Seattle, as well as co-operative offices in other

cities. These offices are recognized centers for reliable information regarding domestic and foreign trade. They adjust trade differences and render special service to foreign buyers seeking goods in the United States.

The Trade Information Division furnishes a very great variety of information on foreign markets, including proper methods of packing, the financing of export shipments, the sources of foreign credit data, the names of dealers and importers abroad.

Through the daily publication, Commerce Reports, with its numerous special monographs, the Editorial Division makes available to the business public information on commercial and industrial conditions in all parts of the world. It contains authoritative articles prepared by American representatives, excerpts and translations from foreign publications, commercial statistics, compiled in the Department of Commerce, and brief items covering business conditions in all parts of the world. One of the most practical and immediately valuable features is the list of "Foreign Trade Opportunities."

The Bureau of Foreign and Domestic Commerce also issues many books and pamphlets (many of them appropriately illustrated), varying in size from 16 to 500 and 600 pages. These include general commercial handbooks, publications on foreign tariffs, and monographs presenting the detailed results of investigations into foreign markets for specific lines.

Automobiles Now Admitted Into United Kingdom

LONDON, April 16.-The Controller of Import Restrictions will admit under license shipments of automobiles up to 50 per cent. of the number or shipping measurements or quantity imported up to September 1, 1913. Each importer must apply for an individual import license and submit a sworn statement as to his imports during 1913. The term "Automobile" is stated to cover motor vehicles of all kinds, including cycles, and motor vehicle accessories.

The number of complete motor cars from the United States imported into the United Kingdom in 1913 was 3619, and of chassis 328. The value of imports of motor-car parts other than rubber tires and tubes was £224,428 (\$1,092,178). The imports to be licensed will presumably amount to approximately one-third of these totals.

Russian Mercantile and Industrial Corp., 50 E. 42nd St., New York City, announces that it undertakes the preparation in the Russian language of technical and business literature, such as catalogues, booklets, leaflets, etc., as well as research work on Russian subjects.

Use of Metric System Important for Trade With Latin-America

WASHINGTON, April 25.—A recent report prepared by the Bureau of For-eign and Domestic Commerce on the general use of the metric system in Latin-America, shows that it is to the interest of the exporter to these countries to meet the wishes of his customers in this regard. The metric system is rapidly supplanting the old Spanish measures which have been in use in various parts of Latin America. In many countries the use of the metric system of weights and measures is required by law, and goods invoiced according to other systems are confiscated.

Trading With China-Guaranty Trust Co., New York City-The fundamentals of the Chinese character to which the American manufacturer and exporter must adjust their plans if they would sell their products in China, are summed up in this booklet recently issued by the Guaranty Trust Co. The booklet contains specific information regarding preparation for a selling campaign in China. packing and advertising for the Chinese market, combinations which are successful in China, etc.

Prospects Good for Sale of American Trucks in **Dutch East Indies**

BATAVIA, JAVA, March 20 .- The American automobile dominates the markets of Netherlands India at the present time, and, no doubt, in the future will continue to control, in a very large measure, this field, according to Consul A. E. Carleton. There are ap-proximately 12,000 cars in use throughout the archipelago, and practically all the cars sold since 1915 were American. Previous to that time, the popular motors were Italian and French, chiefly Italian. Imports for the past three years have averaged about 2500 yearly.

The market for trucks is comparatively undeveloped. At present there are probably only about 200 in the Netherlands India, but the future will probably see considerable increase in the import of motor trucks suitable for town use and long-distance hauls.

There are certain conditions existing in Netherlands India which require some consideration on the part of American manufacturers, if the present domination of trade is to be maintained. The special requirements of a car for this market are (1) an adequate cooling system, as the heat is naturally tropical and in the mountains particular attention must be paid to this feature; (2) a motor powerful and flexible enough to take easily the numerous hills and to cover long distances; and (3) a good gear and springs large and strong enough to insure easy riding qualities.

A report on the market for automobiles in the Dutch East Indies, prepared by the Far Eastern Bureau, says that the territory of local agents in the Dutch East Indies should not be limited too narrowly. However, an agent making headquarters in Batavia is two days by rail from Surabaya and three days from Banyuwangie. Menado, the center of the Moluccas, is a two week steamer trip, and a trip around the Celebes requires

twenty-seven days.

For one agent to work the whole archipelago periodically would not only require his full time, but prove exceedingly expensive. A branch office or district agency, therefore, in Batavia, with authority over the whole colonial market would seem a practical solution. Such an office could establish sub-branches at all the principal centers, and in so doing take initial orders. It would subsequently collect and handle in a lump order from Batavia all outlying orders, at a great saving in cable charges, and the goods could be shipped direct to such branches and financed through its bank at Batavia, the branch distributing the shipment to its sub-agents.

Such a district agency would also save expense and time by acting as a clearing house for market reports from the manufacturer to the sub-agencies, and could thereby answer every inquiry as to prices in short order from the latest information at its command. The advantages and economies of such a plan are particularly pertinent factors in successful marketing in this locality.

Salesroom for Trailers Exclusively

From the time trailers were first put on the market it has been a hard job to convince prospective agents that trailers could be sold from a salesroom as an exclusive sales proposition, the same as trucks and passenger cars are sold in every city in the country. While the trailer manufacturers have been certain in their own minds that this could be done they have had a hard time convincing their prospects.

vincing their prospects.

Determined to prove that it can be done, at a good profit, the Ohio Trailer Company, of Cleveland, has opened an exclusively trailer sales store at 6102 Euclid Avenue, Cleveland, and will prove to the trade in the next twelve months that this kind of a business can be conducted at a profit. A full supply of the company's products will be placed in the store, including two models of two-wheel, 1-2 ton capacity; two models of two-wheel 3-4-ton capacity, and one model each of one, two and three-ton four-wheel types.

The store will be under the general supervision of C. A. Reigler, sales manager of the company, and W. E. Ferris, plant manager, with Messrs. L. F. Ferris and T. H. Halliday in direct charge of

A very careful record will be kept of sales costs, operating costs, etc., so that at the end of the half-year and year periods the company will be enabled to show just what a salesroom of this type may be expected to do.

Repair-Cost Bonds With Denbys

DETROIT, MICH., April 29.—The Towar-Ayers Co., distributor of Denby trucks in Detroit, is offering to purchasers of Denbys a written guarantee that repair costs for one year will not exceed a fixed maximum sum.

"We have gone over our books carefully, and not only are we prepared to show motor truck users low upkeep. but in the instance of new Denby trucks sold we accompany them with repair cost warranty bonds, which are a novelty in the motor truck business," said J. B. Hance, sales manager of the Towar-Ayers Co. "In these bonds a specific statement is made of what repair cost the owner may expect, and co-operation in which owner, driver and dealer figure tends toward a minimum upkeep expense."

Locktite Sales Manager Covers Territory in Airplane

DETROIT, April 29.—"Airplane" Irvine, sales manager of the Locktite Patch Co., finds trains too slow to enable him to cover his territory successfully, and has accordingly elected to travel in an airplane. His pilot is Phil Wood, brother of George Wood, president of the Locktite Patch Co. He expects to cover three or four large cities each day, besides scattering literature, descriptive of Locktite Patches, over smaller towns enroute.

Standard Tire Company Takes Over Plant at Willoughby, Ohio

WILLOUGHBY, OHIO, April 24.— The factory, good will and entire business of the Standard Tire & Rubber Mfg. Co., at Willoughby, and including a branch store in Cleveland, have been taken over by the Standard Tire Co.

The new company is capitalized at \$500,000, and is planning to increase production, which is at present confined to fabric and cord pneumatic tires, and

red and gray inner tubes.

R. J. Firestone, president of the company, was formerly vice-president and sales manager of the Firestone Tire & Rubber Co.; E. A. Tinsman, vice-president, was formerly factory manager of the Portage Rubber Co.; C. A. McCulloch, second vice-president, is manager of Frank Parmelee Co., Chicago, and treasurer of the Thompson chain of restaurants; Tom A. Palmer, secretary-treasurer, was formerly an officer of the Diamond Match Co. and the Granite Clay Co.

New Jobbing Company in Atlanta

Bailey & Co., with headquarters at 39 South Forsyth Street, Atlanta, Ga., has been organized by A. H. Bailey and E. R. Harwick, to do a general automobile supply jobbing business. A. H. Bailey has been in the wholesale automobile supply business for nine years, and was formerly a member of the membership committee, standardization committee and chairman of the resolutions committee of the National Association of Automobile Accessory Jobbers, now the Automotive Equipment Association. E. R. Harwick was formerly connected with Foote & Davies Co., Atlanta. He was recently discharged from the army, with the rank of first lieutenant.

Japanese Company to Make Trucks

DETROIT, April 17.—A Japanese company organized to manufacture trucks is placing orders for material through Gaston, Williams & Wigmore, of New York City. Detroit automotive firms have received orders for parts for several experimental trucks which will be assembled at once. The company is capitalized at \$2,500,000, and is buying engines, transmissions, steering gears, wheels, clutches and other small parts.

Gary Announces Changes in Personnel

GARY, IND., April 18.—The Gary Motor Truck Co. announces that the following officers have been elected by the company: W. H. O'Donnell, president; C. W. Cole, vice-president; L. W. Nichols, secretary in charge of purchasing; L. A. O'Donnell, treasurer; Frank Dawson, general manager; Theodore Zumstein, sales manager; Edward Von Rowkowski, engineer; E. M. Sharp, superintendent.

Morie Cook, Secretary and General Manager of the Service Motor Truck Company

Mr. Cook was one of the members of the firm of Simon Cook Co., wholesale scrap material dealer, for fifteen years. During the last five years of his association with that company, he was also secretary of the Ft. Wayne Rolling Mill Co., manufacturer of bar iron and steel. He served three years as sec. of the American Coating Mills, of Elkhart, Ind.

For the past five years Mr. Cook has been secretary of the Service Motor Truck Co., Wabash, Ind. He is also secretary of the Motor Truck Manufacturers' Association, and is active in promoting the welfare of that organization,

K-W Ignition Patents Valid

CLEVELAND, OHIO, May 11.—The United States District Court for the eastern district of Pennsylvania has decreed letters patent No. 841,844, granted to Bernet, January 22, 1907; No. 1015300, granted to Cox, January 23, 1912, and No. 1253470, granted to Cox, January 15, 1918, under which the K-W Ignition Co. Lock Switches are manufactured, to be valid. Ivan F. Goodrich and the Goodrich-Lenhart Co. have been declared infringers of these patents, and under the ruling of the court will cease manufacture and sale of the infringing lock switches.

Van Dorn & Dutton Opens Branch Offices

CLEVELAND, OHIO, May 10.—The Van Dorn & Dutton Co., manufacturer of gears, has opened branch offices at New York and Chicago.

Harry F. Keegan will manage the Chicago office, with headquarters at 1241

First National Bank Bldg.

John Keegan will have charge of the New York branch, with office at Room 317, 30 Church St.

Packard Electric Opens New York Office

NEW YORK, May 1.—The Packard Electric Co., with headquarters at Warren, Ohio, has opened a New York office at 141 West 36th St., Room 501, Herald Square Bldg., New York City.

Captain J. Ed. Erickson, who has been in charge of the Transformer Division for the Government since the outbreak of the war, is district manager for the Packard Electric Company, with headquarters at the New York office.

Torbensen Elects New Officers

CLEVELAND, OHIO, April 17.—At a directors' meeting of the Torbensen Axle Co., held recently, officers were elected as follows: V. V. Torbensen, chairman of the board; J. O. Eaton, president; W. J. Baxter and C. F. Hepburn, vice-presidents; F. A. Buchda, treasurer, A. H. Ide, secretary; R. C. Hyatt, asst. sec., and M. M. Risberg, comptroller.

Prominent in the Commercial Car Industry



Secretary and General Manager of the Service Motor Truck Company

"I regularly look for a copy of the COMMERCIAL CAR JOURNAL and find it not only a highly interesting medium, but one of real value."

Molevok

EFFICIENT REPAIR METHODS











Editor's Note: This department is conducted primarily for the new repairman and dealer; also the repairman in the smaller towns who is anxious to place his shop on a better paying basis and do his work in a more systematic manner. We shall appreciate any suggestions or criticism that will help us make this department satisfy your needs.

Making Replacements and Overhauling the Troy Reversible Type Trailers

By C. P. SHATTUCK

ITH the increasing use of trailers the service station of the truck dealer and the repairman as well, may be called upon by their customers to replace parts damaged through accident or abuse and to attend to the few adjustments required. Although the makers recommend that a trailer be taken to the service station of the dealer selling it, this is not always practical, for it may be that the dealer is not convenient and the owner does not wish to lose the service of his truck. Then again a part may be broken through accident that will require replacement before the trailer can be drawn.

Before describing the logical steps of completely overhauling the Troy, reversible type trailers, with which this article deals, attention is directed to two very important features and these are lubrication and alignment of the wheels. Too much emphasis cannot be laid upon the proper lubrication of any transportation unit, and while there are few parts to be lubricated on the trailer, lack of attention will increase the repair and maintenance charges and this in proportion to the neglect. Equally important is the necessity for keeping the wheels properly aligned. This is a very simple task but the method is quite different from that employed in aligning the wheels of the self-propelled vehicle.

Removing the Drawbar

In the event of an accident, resulting in a broken drawbar head, etc., it is essential to remove the drawbar. This is of the telescopic type, that is, the drawbar slides in the housing so that the drawbar complete will have to be removed from the chassis. The first step is to lock the drawbar by placing it in the center with the operating lever down. The drawbar locks automatically when it reaches center, being engaged by two hooked tumblers.

To remove plate over coil spring, take out two screws, one at either end, and remove plate. Next remove the two sliding spring pads, one at either end of the coil spring, and take out the spring.

Note.--In removing the coil spring, which has considerable tension, use can

be made of two sections of a conventional type of spring or two pieces of flat metal about 18 in. long as levers. A rib at right angles and integral with the drawbar provides a fulcrum, as shown by an accompanying illustration, which also shows how the levers are used. Remove but one spring pad at a time.

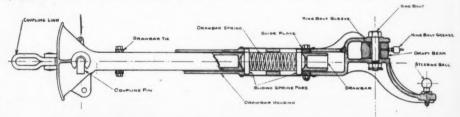
Stripping the Drawbar, Etc.

Take out cotter pins and remove guide plate bolt nuts (2), bolts (2) and guide plates.

Next take out cotter pins and remove the nuts (2), bolts (2) and plates (2) of the drawbar tie. The next step is to pull out the drawbar. There are two drag links in the Troy trailer design, one set at either end. These drag links followthe factory there may be a possible clearance of from one to four one-thousandths inch. The factory suggests the renewal of these bushings as soon as 1-64-in. wear has taken place, but this is not imperative. It is doubtful if a play of 1-16-in, will be noticeable in the operation of the trailer and 1-32-in. will not create any undue amount of side sway, which may be attributed to this one thing alone. The king bolt will not require fitting, the sleeve coming reamed to size and it is a drive fit in the draft beam.

Replacing Drawbar Housing

Replace drawbar housing in the same manner it was removed. Before replacing any of the other parts, set up the nut of the king bolt and test the action



Part Longitudinal View of Drawbar Assembly, Showing How Drawbar Spring is Retained by Pads

ing conventional practice and to disconnect the drag links, remove cotter pins and screw out the ball seats or plugs sufficiently to allow the steering balls to clear; that is, to permit detaching the drag links which, as will be noted, connect the steering balls of the drawbar housing with those of the steering knuckles.

Removing the King Bolt

To remove the king bolt, which will be necessary before attempting to take out the drawbar housing, displace cotter pin of king bolt nut, remove nut and king bolt. The last named has a sleeve or bushing for a bearing. With the drawbar housing free of the draft beam, and with it free to move (when the drawbar lever is up or in a vertical position), slide it to either the extreme right or left and remove it.

Relative to the king bolt sleeve or bushing replacement. When these leave

of the drawbar housing, by moving it back and forth. It should not slide easily; there should be a certain amount of resistance. The adjustment will require a little experimentation. After obtaining the proper adjustment replace cotter pin. Smear the king bolt well with grease before replacing it.

Next test action of the drawbar lock; especially, if a new drawbar housing has been used. The factory part comes with the plates slightly large where the two hooked tumblers of the lock engage. This is done to permit of fitting and to avoid the possibility of play. If when the lever of the drawbar lock is down and the drawbar does not lock automatically, examine the plates above referred to. The drawbar must, of course, be at right angles to the draft beam.

Reassembling Drawbar

Replace drag links on steering balls of drawbar housing and steering knuckles after repacking with grease, and adjust the seats or plugs and cotter pin. The drag link should be adjusted so that it may be turned without binding or in the same manner as the drag link of an automobile. Assemble the drawbar tie and guide plates, cotter pinning nuts. Replace coil springs and the two sliding

in. at the front without a body and 3/8 in. with an empty body, considering that the conventional type of body is used.

Before attempting to check the alignment of the wheels see that the spring shackles on either side occupy the same position. If the front shackle on the right side is vertical that on the other

the shackle and carry the free end around outside of wheel and under hub, tying the free end to the other spring after passing it around the other wheel, Before measuring see that both drawbars are locked in place. Adjust to the dimensions for chassis or with empty body as the case may be. The adjustment is made by loosening lock nuts on drag links and turning latter which have a right and left-hand thread. In aligning wheels it should be borne in mind that the process is the reverse of the truck, in that the gather of the trailer wheels is at the rear whereas those of the truck toe-out at the rear and gather at the front. When the trailer is loaded the wheels will align.



Showing Method of Aligning Troy Trailer Wheels String should be placed as near to hub as possible. Wheels should incline toward center of trailer with and without body

spring pads, pack well with grease and screw down the cover plate.

Note.—After considerable use the coil spring may lose its tension. A simple test is to grasp the draw head member with both hands and push and pull it. This will require considerable strength to move it, and if it moves easily insert a new spring.

Aligning Wheels

It is not a difficult matter to align or test the alignment of the wheels. It should be borne in mind that the wheels do not align with the body empty or the chassis alone. They should toe-out 1/2

Right: Showing the Drawbar Disassemand Sleeve, Sliding Spring Pads, and Hous-

vertical and the one corresponding on the other spring be forward or back do not attempt to check any wheel alignment or make any adjustment. This applies to the other springs as well.

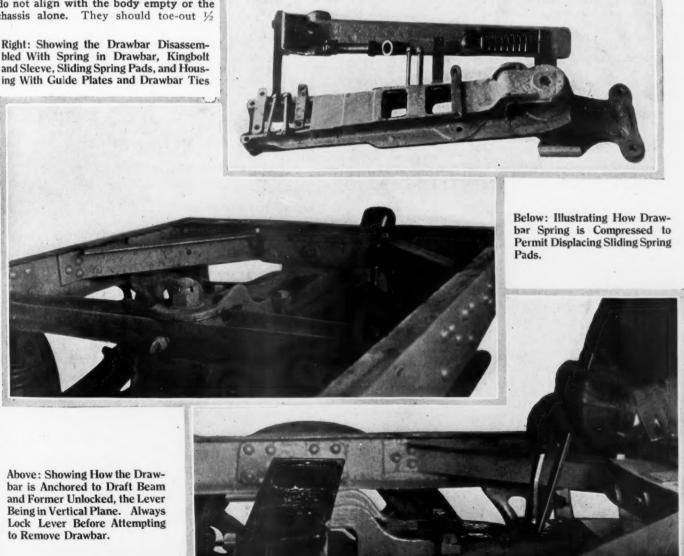
side must also be vertical. If one be

Position of Shackles Important

With the spring shackles in proper relation to one another, tie one end of a piece of string around the spring near

Lubrication Directions Should be Carefully Followed

The spring shackles are bronze bushed and new bushings do not require fitting. The other components are conventional. The wheels have roller bearings which are accessible by removing four cap screws and lock washers securing the hubs. Lubrication of the king bolts, spring shackles and spindles are by the



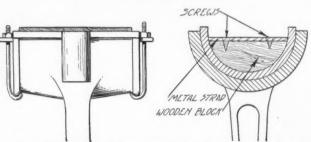
conventional grease cups, all readily accessible. It should be mentioned that the coil spring has a cover plate on the under side of the drawbar housing. In partial or complete overhaul of the chassis clean out all grease cups and see that their passages communicating with the parts are unobstructed, refill with fresh lubricant and give the cups one or more turns. It is important that the drawbar coil spring be kept packed with grease and the supply renewed every 1000 miles.

In driving out frozen bushings in steering knuckle spindles with ordinary

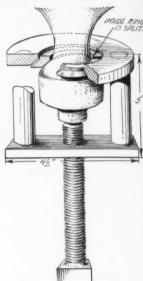
Helpful Suggestions for the Repairman



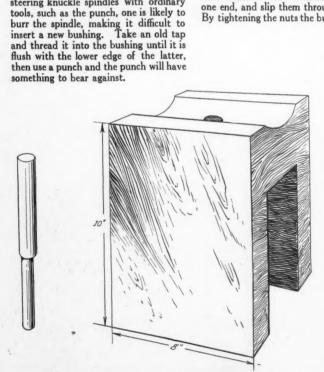
When filing bearing caps the ends should be tested for alignment. A surface plate for this work can be made by using a piece of $\frac{3}{8}$ -in. plate glass on a wooden table, smearing the glass with Prussian blue and testing the cap. By using a pair of wood strips or straps, slotted at either end and held by bolts and wing nuts, emery paper or cloth can be held firmly and smoothly on the glass when fitting piston rings, etc.—R. C. Rognon, New York City.



In fitting babbitt bushings in connecting rods and caps, the usual method is to file the liner flush with the cap. As there is more or less spring to the metal, and unless the liner be forced into the seat before filing, too much metal will be removed in filing. It is a simple matter to make a clamp to hold the bushing. Take a piece of hardwood and turn to the same size as the journal and split about field. Take a piece of flat stock slightly longer than the wood, to permit of carrying the hook-shaped members, drill and countersink, then attach to wood with screws. Make two hooks, threading these at one end, and slip them through a hole in the metal strip, as shown. By tightening the nuts the bushing will be forced home for the filing job.



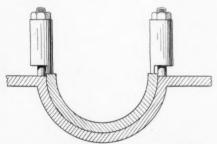
When the threads of the hub cap are so badly damaged that the wheel puller cannot be screwed on, the wheel may be removed by the special tool shown above. It comprises a circular cone member, sufficiently large to slip over the hub, two extensions at right angles, and a cross-member carrying a threaded bolt. The other part is a split ring (shaped) fitting in the cone of the larger member. To use, the large member is slipped over the hub and the two halves of the split ring placed around the hub and inside of the large cone.—Charles Prescott, Long Island City, N. Y.



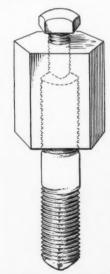
When the greater number of the engines handled are of the same bore, it will pay to make a jig to avoid damaging the piston when driving out the wristpin. Take a block of hardwood and bore to the diameter of piston, then bore a hole in center, slightly larger than the diameter of the wristpin. Next make a punch, one end of which should equal the diameter of the wristpin and the other that of the inside diameter. The wristpin can be driven out easily with a hammer or the arbor press used.



This is a magnet designed for the purpose of removing broken jackshafts, without necessitating the disassembly of the jackshaft housing. Take a 3x1-in. iron core and wind with eight layers of magnet wire so as to obtain a 15-lb. pull. Pin core to brass tube and carry the two leads from windings inside the brass tube to the switch. The winding is for 110-volt direct current, but the magnet can also be made for 220, with larger windings.—R. C. Rognon, New York City.



In scraping in new babbitt bearings in upper half of crankcase it is necessary that the bushing be held firmly in place before spotting. Take a tube that will just slip over the bearing cap stud and cut away a section so as to leave a shoulder, as shown in the sketch. Slip tube over stud with shoulder resting against bushing and tighten nut on stud. This will force the bushing home. Two clamps should be used with each bearing and the nuts should be set up equally tight.



To replace cylinder block studs quickly, as on Vim engines, take a piece of hexagonal stock and thread to within \(^3\)/e-in. of top. Drill and thread this part to take a \(^1\)/4-in. set screw. The set screw acts as a stop when screwing home the stud, which work is accomplished by the speed wrench. — R. C. Rognon, New York City.

Personal Items

Joseph A. Anglada, former general manager of the Commercial Car Unit Co., of Philadelphia, has opened an office as consulting engineer at 1337 Real Estate Trust Bldg., Philadelphia.

V. N. Barton has been made sales engineer of the Duplex Engine Governor Co., Inc., Brooklyn, N. Y. He will cover Pennsylvania and the Southern states.

J. Berge, formerly associated with the Stewart-Warner Speedometer Corp., has been appointed chief engineer of the speedometer department of the Champion Ignition Co., Flint, Mich.

Wm. R. Blackburn, for twelve years factory manager of the Cadillac Motor Car Co., has accepted a similar position with the Gray Motor Co., and will have charge of the manufacture of its Victory motor.

O. L. Blanchard, district manager of the Fruehauf Trailer Co., will have charge of the New England territory. He will make his headquarters at Boston.

S. Bloom has been appointed director of advertising by the Essenkay Products Co., Chicago, Ill.

George T. Briggs, who has been sales manager for the Wheeler-Schebler Carburetor Co. for the past eleven years, has resigned his position to join the Sinclair Refining Co., with headquarters at Chicago. Mr. Briggs will have charge of the Opaline Motor Oils

George W. Brooks has been appointed district representative for the Hudson Motor Specialties Co., Philadelphia, Pa. His territory will include Texas, Oklahoma, New Mexico. Kansas and Arkansas.

Walter P. Chrysler, president and general manager of the Buick Motor Co., has been made vice-president of General Motors Corp.,

R. L. Corey has recently been appointed manager of the Chicago office of the National Gauge & Equipment Co., located in the Railway Exchange Bldg.

J. K. Cravens has been appointed sales manager of the Duplex Engine Governor Co., Inc., Brooklyn, N. Y.

C. F. Crowley has been made Chicago city sales manager of the Essenkay Products Co., Chicago, Ill.

John Doherty, formerly president of the Acason Sales Co., Philadelphia, has formed an association with the H. Kleinhans Co., Pittsburgh, and will have charge of the Acason truck sales of that company.

Charles J. Evans has been appointed assistant manager of the Omaha branch of the J. I. Case Plow Works, Racine, Wis.

Frank R. Farnham, formerly sales and advertising counsel for Hollister, White & Co., has joined the organization of kex W. Wadman, Inc., New York City.

Fred F. Fulton, formerly sales manager of the Inland Machine Works, has accepted a position as sales manager of the Ever-Tight Piston Ring Co., St. Louis, Mo.

P. W. Gaylor has left for an extensive trip throughout the Far East for the Clyde Cars Co., New York City. He will visit Japan, China, Siam, Federated Malay States, Straits Settlements, Dutch East Indies, India and other eastern countries.

John A. Glaspy has been made assistant general sales manager of the International India Rubber Corp., South Bend, Ind. He was formerly manager of the Milwaukee branch of the Kelly-Springfield Tire Co.

J. C. Given, southern district manager of the L. A. Young Industries, Inc., Detroit, Mich., and Shelbyville, Ind., has been appointed sales manager of the Power Division of the company, and will make his headquarters at Shelbyville.

H. A. Goddard has been made sales manager of the Militor Corp., New York City,

Charles C. Gordon, formerly secretary of the Gordon-Little Co., is now connected with the New York Supply & Machinery Co., Chicago, as general manager. Mr. Gordon has resigned as real estate expert on the General Staff to re-enter the line of business he was engaged in prior to his induction into the military service.

Herbert Higginbotham has been appointed district sales manager for the Oklahoma Auto Mfg. Co., North Muskogee, Okia.

George Hills has resigned as manager of factory sales of the American Rolling Mill Co., to accept a position as general manager of the Ohio General Tractor Co., Cleveland,

Earl Holley has been appointed advertising manager of the Holley Kerosene Carburetor Co., to succeed H. S. Benjamin, who resigned recently.

R. B. Huffard, of the truck department of the International Harvester Co., is now consulting expert for the Handy Motor Truck Co., Detroit.

George H. Hunt has been appointed sales manager of the wheel division of the Detroit Pressed Steel Co., Detroit.

H. E. Johnston has been appointed assistant to President Markle, of the Oneida Motor Truck Co., Green Bay, Wis.

B. F. Kelly has been made director of sales for the Weidely Motor Co., Indianapolis.

Walter L. Kroneberger has returned to the Vim Motor Truck Co., Philadelphia, Pa., as director of agencies. He has been connected with the Third Division Motor Ammunition & Supply Trains.

M. T. Langlais, who has been associated with the L. Peacock Auto Co., distributor of Service trucks at San Francisco and Oakland California, died recently.

J. G. Loeffel will cover Wisconsin, Iowa, Minnesota and Illinois for the Hudson Motor Specialties Co., Philadelphia, Pa.

Henry G. McComb announces the opening of an engineering sales office at 1790 Broadway, New York City. He has secured the agency for West cast steel truck wheels.

W. F. McLaughlin has been appointed factory superintendent of the Hyatt Bearings Division of General Motors Corp., at Harrison, N. J.

G. E. McLeran will represent the Parker Motor Truck Co., Milwaukee, Wis., in the states of Colorado, Wyoming, Nebraska and the Dakotas.

W. L. Mahon has joined the General Motors Truck Co., Pontiac, Mich., and will have charge of the department of research and statistics.

W. E. Marvel has been appointed district manager of the Service Motor Truck Co. for the states of Utah, Colorado, Wyoming and parts of Mexico and Idaho.

W. R. Mason will represent the O. Armleder Co., Cincinnati, O., in New York State,

Nellson M. Mathews has been made assistant advertising manager of the Four Wheel Drive Truck Co., Clintonville, Wis.

G. L. Meyers, for the past three years sales engineer of the Monarch Governor Co., Detroit, Mich., has been made sales manager of that company.

C. B. Norton is now general distribution manager of the Packard Motor Car Co., Detroit, Mich.

F. H. Prescott has joined the engineering staff of the Remy Electric Co. as designing engineer of motor and engineering equipment.

George R. Rayner has been made vice-president of the Carborundum Co., Niagara Falls, N. Y., succeeding R. B. Mellon, of Pittsburgh.

George L. Ritter has been promoted to the position of assistant sales manager of Duplex Engine Governor Co., Inc., Brooklyn, N. Y.

C. F. Rouze has been appointed director of sales promotion of the General Motors Truck Co., with headquarters at Pontiac, Mich.

J. N. Ryan will cover New York, New Jersey and New England territory for the Duplex Engine Governor Co., Inc., Brooklyn, N. Y.



Matt R. Korshin Who has joined the Selden Truck Sales Company as western sales manager, with headquarters at Chicago.



J. L. Huston
Of Jeavons Spring Lubricator
Co., Cleveland, O., who has been
made president of the Cleveland
Automotive Association.



George H. Hunt
Who has been appointed sales
manager of the wheel division
of the Detroit Pressed Steel
Company, Detroit, Michigan.



S. R. Swiss
Who was recently appointed advertising manager of the Republic Motor Truck Company, Alma, Michigan.

Stuart S. Rydehn has been appointed factory superintendent of the Bantam Ball Bearing Co., Bantam, Conn.

Arthur M. Semones has been appointed advertising manager of the J. I. Case Plow Works, Racine, Wis., sales agent for the Wallis tractor.

C. K. Sencebaugh is now general manager of the Rex Machine Co., Chicago, Ill. He was formerly sales engineer of the tractor equipment division of the Remy Electric Co.

Steward Siosson has been appointed Pacific Coast manager of the Rubber Products Co., Barberton, Ohio.

E. W. Sudduth has been appointed southern district representative for Rainier worm drive delivery trucks and will make his head-quarters at 126 N. 60th St., Birmingham, Ala.

Andrew V. Terek has returned to the employ of the Bantam Ball Bearing Co., Bantam, Conn., as master mechanic, in charge of the upkeep of the factory. Mr. Terek was recently discharged from the Naval Aviation Service.

F. J. Tone has been made president of the Carborundum Co., Niagara Falls, N. Y., succeeding the late Frank W. Haskell.

O. S. Tweedy, vice-president and general manager of the L. A. Young Industries, Inc., Detroit, Mich., and Shelbyville, Ind., has resigned, effective May 1.

G. A. Ungar has been made a vice-president of F. R. Blair & Co., Inc., New York

City. He will have charge of the sale of Flexite products. He was formerly engineer and technical director of the S. K. F. Ball Bearing Co.

R. T. West has been made sales manager of the Hession Tiller and Tractor Corp. Mr. West was formerly manager of the tractor department of the Chicago-Marmon Co.

F. V. Wick has been elected president of the Kalamazoo Spring & Axle Co., Kalamazoo, Mich., to succeed A. B. Eaton, who died recently. Mrs. A. B. Eaton was elected vice-president and J. S. Clary, secretary and treasurer.

"Build now—you can notice the earmarks of Prosperity along Good Roads."



Vulcan Storage Battery Co., Brazil, Ind., has purchased the plant of the Brazil Stamping and Machinery Co. The building is especially fitted for the manufacture of storage batteries. Wm. Petschel is in charge of production.

Louisiana Motor Car Co., Shreveport, La, which recently took over the production of the Bour-Davis car, is planning to put on the market a 2-2½-ton truck also. The company is capitalized at \$1,000,000 and is headed by T. H. McGregor. W. F. French is general manager.

V. A. Nellson Co., Boston, Mass., electrical service engineers, announce the removal of their service station from 390 Newbury St. to 708-10 Beacon St. This company is New England service representative for the Connecticut Ignition and New England distributor of the Dayton starter for Ford cars.

General Motors Corp., Detroit, has completed negotiations for taking over the Michigan Crankshaft Corp., of Lansing, Mich. The National Engineering Company's plant at Saginaw, Mich., which was owned by the Michigan Crankshaft Corp., is now also General Motors' property.

Jenkins Vulcan Spring Co., St. Louis, Mo., announces the removal of the St. Louis branch of the company to Kansas City. The St. Louis territory will, in future, be served from that point.



G. L. Moyers

Former sales engineer of the
Monarch Governor Company,
Detroit, who has been made sales
manager of that company.

Rothert Motor & Supply Co., manufacturers' agents and distributors of motor specialties, All-Car Units and All-Steel Trailers, announces its removal from Council Bluffs, Iowa, to 2209-11 Harney St., Omaha, Neb.

Hammered Piston Ring Co., Newark, N. J.,

Hammered Piston Ring Co., Newark, N. J., announces that the name of the company has been changed to the American Hammered Piston Ring Co.

Keinel Auto Supply Co., Newark, N. J., announces its removal to larger quarters at 540 Broad St., where a complete line of tires and accessories will be carried. This company does a wholesale, as well as retail business, and has four representatives traveling through New Jersey and parts of New York state.

Carpenter Tire & Rubber Co., Inc., distributor of Gillette solid tires, announces the removal of its office to the S. E. corner 60th St. and Columbus Ave., New York City.

Morris, Russell & Co., Inc., New York City, announces that its new warehouse is located at 77 Reade St.

North East Electric Co., New York branch, announces its removal from 125 West 51st St. to 351 West 52nd St.

Rainier Motor Corp., New York City, announces that it is now occupying a new service building at Webster and Fifth Avenues, Long Island City. The salesrooms at 225-27 West 58th St., will still be maintained.

Savage Arms Corp., New York City, announces that a Detroit office has been opened at 1408 Kresge Bldg. Brockholst Matherson is in charge.

Rubber City Clearing House Co., Akron, Ohio, has recently acquired the output of the United Rubber Co., manufacturer of the Summit Good-Will tire, and is now distributor and owner of this casing.

Atlas Wheel Co. is now the corporate title of the former Ackerman Wheel Co., Cleveland, Ohio. This is not a reorganization, and no change other than that of name has been made.

The Glidden Co., Cleveland, Ohio, has taken over the business of the A. Wilhelm Co., of Reading, Pa. This transaction gives the Glidden company a factory in the East, adding to its facilities the dry color and chemical equipment of the A. Wilhelm company. The Glidden company is planning to increase the facilities of the Reading plant.



J. H. Weller
Who has been appointed assistant to B. W. Burtsell, president of the Herschell-Spillman Motor Company, North Tonawanda, New York. He will be in charge of production.



Captain Fred Post

Who has recently joined the

sales staff of the General Motors

Truck Company, and will mar-

ket GMC trucks in Canada.

Milton W. Franklin
Formerly director of the Department of Radiology in the New York Health Department, who has joined the Remy Electric Company, Anderson, Ind., as research engineer.



G. R. Lundane
Who has been placed in charge
of the New York office of the
Black & Decker Manufacturing
Company, Baltimore, Maryland, at Room 2920 Equitable
Building.



Harry Levene
Formerly production manager
of the General Motors Truck
Company, of Pontiac, who has
been made works manager of
the Monarch Governor Company, Detroit.

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Goodrich-Lenhart Mfg. Co. announces that the general offices of the company have been moved to Hamburg, Pa., where a new factory building has recently been completed, and in which the general offices will be located. A sales office will be maintained in the Widener Bldg., Philadelphia, where the general office has been located for the past three years.

years.
Chilton Co., Philadelphia, Pa., announces the removal of its Chicago office to 28 E. Jackson Blvd.

General Asbestos & Rubber Co., Charleston, S. C., announces that the Chicago branch of the company has removed from 106 W. Lake St. to 14 North Franklin St.

Harvey Spring Co., Racine, Wis., is now known as the Harvey Spring & Forging Co.

Factory News and Capital Interests

Saginaw Malleable Co., Saginaw, Mich., announces that the capital stock of the company has been increased from \$650,000 to \$1,150,000. The company intends to double the capacity of its plant and increase its working force to 1200 men.

Seaboard Metal Corp., Jersey City, N. J., has recently been organized to manufacture white metal products, including solder, babbitt metal, type metal, etc. The factory and main office is located at Jersey City, and a New York office at 2 Rector St.

Arrow Grip Mfg. Co., Glens Falls, N. Y., has let the contract for the erection of a new factory. Ground will be broken at once and it is planned to equip the factory with the most modern devices for the production of Arrow Grip non-skid chains. The company has recently been reorganized, and the following officers will be elected: George Tait, president; William H. Dennin, vice-president; E. G. Mertens, secretary and sales manager; William H. Gelshenen, treasurer, and T. M. Avery, asst. treas. and gen. mgr.

The Rubber Products Co., Barberton, Ohio, announces that it is materially increasing its manufacturing and storage space to take care of the increased production of Stronghold tires and tubes.

Union Switch & Signal Co., Swissvale, Pa., has purchased machinery for finishing crankshafts and camshafts, and will be ready to make deliveries about June 1. This company manufactures its own forgings.

Wilkinson Vulcanizer Mfg. Co., San Bernardino, Cal., which for the past three years has been perfecting its dry cure process for automobile tire retreads, announces that it is now enlarging its factory to take care of an increased volume of orders.

B. & W. Mfg. Co. has taken a long-term lease on the plant at 5235-57 Ravenswood Ave., Chicago, Ill., and will manufacture there radiators for trucks, tractors and passenger cars. The building provides 65,000 sq. ft. manufacturing space and the company expects to produce 600 radiators a day.

Essenkay Products Co., Chicago, Ill., has found it necessary, owing to increased demand for its products, to extend its plant. A five story building, containing 30,000 sq. ft. of floor space, adjoining the present plant 220 W. Superior St., will be occupied as soon as necessary repairs have been made.

Ignition Plug Co., which has been organized to manufacture the Tipco spark plug, is preparing to erect a factory at Louisville. Ky. E. R. Stucky is president; H. C. Smith and C. D. Rodman, vice-presidents; W. T. O'Neal, secretary and treasurer, and A. C. Reager, assistant secretary of the company.

General Motors Corp., Detroit, has decided to locate its Pacific Coast branch of the Samson tractor and truck division at Stockton,

Cal., and has bought a tract of land there for the erection of its plant.

Hayes Wheel Co., Jackson, Mich., has leased the plant of the Jackson Munitions Corp. The company is making wheels for trucks and tractors and has already begun deliveries of fabricated steel wheels.

Oneida Motor Truck Co., Green Bay, Wis., has increased its capital stock from \$300,000 to \$600,000, and plans the erection of new buildings in the near future. At the annual meeting of the company, held recently, Lafayette Markle, formerly president and general manager of the Republic Motor Truck Co., was elected president of the Oneida company.

Lavine Gear Co., Milwaukee, Wis., has recently completed a new factory building which will be devoted to the manufacture of steering gears for trucks and tractors. The new plant is of fireproof construction, 275 by 150 ft. There are separate grinding and polishing rooms and a department devoted to heat treating. Production capacity is 500 gears a day, which is three times the capacity of the old factory. The company has increased its capital stock to \$1,000,000.

New Agencies

Tuscaloosa Motor Co., Tuscaloosa, Ala., has been appointed distributor for Rainier trucks in southern Alabama.

Fulton Motor Truck Co., of Illinois, has recently been organized at Chicago, to handle Fulton trucks in the state of Illinois. Headquarters will be at 3518-20 Michigan Ave. James Levy is president, H. E. Rose, vice-president and W. S. Palmer, secretary.

Arthur L. Johnson, 120-26 N. First St., Rockford, Ill., will distribute White trucks in Winnebago county territory

Cooper Motor Co., Kansas City, Mo., has closed a contract with the Gary Motor Truck Co., Gary, Ind., for the distribution of Gary trucks in Missouri, Arkansas, Oklahoma, western Iowa. Nebraska and South Dakota.

Martin Motor Truck Co., St. Louis, Mo., will distribute Diamond T trucks in the St. Louis territory.

Melchior, Armstrong & Dessau, 116 Broad St., New York City, has secured the agency for Rainier trucks in Denmark.

Youroveta Home & Foreign Trade Co., Inc., 165 Broadway, New York City, has secured exclusive sales rights for Rainier trucks in the Argentine Republic, China, Siberia and the Balkan States.

Autocar Co., Ardmore, Pa., has appointed the following dealers: Franklin Service & Sales Co., Portland, Me.; Guy & Jones, Norfolk, Va.; Allen Tire Ce., Savannah, Ga.; B. B. Willingham, Macon, Ga.; Sharon Motor Co., Sharon, Pa.

Lance Motor Car Co., Reading, Pa., has opened salesrooms at 7 S. 22nd St., Philadelphia, Pa., and will handle Commerce trucks at Reading and Philadelphia.

Heller Sales Co., Wapwollepen, Pa., distributor of Commerce trucks, has opened a sales and service station at 24 N. Main St., Wilkes-Barre, Pa.

Tozier Engine Works, 601 Green St., Columbia, S. C., has been appointed distributor of Rainier trucks in that section of the state.

Kelly-Springfield Motor Truck Sales Co., 1004 Granby St., Norfolk, Va., will distribute Rainier trucks in the state of Virginia. This company is about to open a branch in Richmond. J. A. C. Groner is vice-president and general manager and C. H. Alexander, sales manager.

W. L. Reeder, Johannesburg, South Africa, has closed a contract with the Nash Motors Co. for the distribution of Nash passenger cars and trucks in Johannesburg.

Frederick Robinson

Frederick Robinson, director and former vice-president of the J. I. Case Threshing Machine Co., Inc., of Racine, Wis., died at his home in Racine, on April 22.

Mr. Robinson was born in Kenosha, Wis., November 15, 1862, attended the public schools in that city, and later was graduated from Lake Forest University.

He became purchasing agent of the J. I. Case Company in 1896, and in 1898 was elected vice-president and general manager. In 1914 he retired as vice-president, but remained on the board of directors and took an active interest in the affairs of the company.

James Viles

James Viles, chairman of the board of directors of the Buda Co., Harvey, Ill., died on April 27, at the age of 64 years. During the past fifteen years Mr. Viles has been connected with the Buda Co., and during the greater part of that time was president of the company. He resigned this office in January of this year, and was succeeded by his son, who will continue as president of the company.

C. N. & F. W. Jonas, representatives for the American Grinder Mfg. Co., of Milwaukee, Wis., are introducing a new line of socket wrenches for use on automobiles, trucks, tractors and for general garage and machine shop use. The American Grinder Mfg. Co. has equipped its original building for the manufacture of Blackhawk wrenches, and has transferred to another building the manufacture of its self-oiling tool grinder. C. N. & F. W. Jonas have offices in Chicago, Los Angeles, San Francisco and Seattle.

Aircraft and Motor Products Co. has been formed in New York City, with offices on Madison Ave., and will manufacture products for airplanes and motor vehicles which have been developed primarily from successful war products. The company has developed a spark plug, a line of greases and gear oils, and a bronze bearing metal. Aluminum castings, bronze castings and gears will also be manufactured. Branches have been established in Chicago and Philadelphia.

Duplex Truck Co., Lansing, Mich., announces that it has put in operation a zone system by which dealers are brought into closer contact with the factory. Under this system the country is divided into seven zones, each zone being served by a Duplex representative, who will make periodical calls on every dealer and distributor in his territory for the purpose of effecting close cooperation in the marketing of Duplex trucks. Zone representatives have been appointed as follows: Zone No. 1, George C. Southworth; Zone No. 2, C. O. Canniff; Zone No. 3, L. W. Browning; Zone No. 4, H. P. Bare; Zone No. 5, F. L. Chesebro; Zone No. 6, F. J. Miner; Zone No. 7, Alex Smith.

Motor Transport Day Planned at Detroit

DETROIT, May 8.—One hundred companies engaged in highways transportation, together with seventy truck manufacturers, distributors and tire and accessory manufacturers, will take part in the motor transport demonstration to be held May 19.

A parade of trucks, in which trucks fitted for service with the armies in France and at home, trucks loaded with milk, farm merchandise, machinery and live stock, will participate, is one feature of the program which has been arranged by the Detroit Transportation Association, under whose auspices the Motor Transport Day is being conducted.

Governor Sleeper and Mayor Couzens have approved the celebration and have promised to be present.

St. Louis Plans a Truck Week

ST. LOUIS, May 5.—St. Louis dealers are planning to carry the latest information concerning the plans of the War Department in regard to the disposal of its trucks to the farmers of Missouri. Beginning June 2, if plans already formulated are carried out, one hundred trucks, carrying farm products, live stock, etc., will start on a five-day trip through Missouri.

Speakers, who will talk to the farmers on business and good roads, will accompany the truck train.

The plan was suggested by Harry G. Moock, business manager of the National Automobile Dealers' Association. It is manager Moock's idea to hold a "National Truck Day." He proposed the plan to the St. Louis dealers and was met with such a ready and enthusiastic response that it was decided to carry it out immediately.

Delivery Company Has Unique Financing Plan

LINCOLN, NEB., April 18.—The Co-Operative Garage Delivery Company, which is planning to establish motor truck routes in every part of eastern Nebraska where the roads are practical, has a plan for financing the business which is rather unusual.

The company issues certificates on interest to any one wishing to buy them. Only certificate holders are privileged to ship or receive goods through this transportation company. The business is conducted by a board of trustees elected each year by the certificate holders.

The company hauls goods from the wholesale and jobbing houses to the smaller towns, and in return brings produce either direct from the farmers or from the country stores.

With the first net earnings, 10 per cent. will be paid to the certificate holders, whether they have furnished any hauling or not. The balance of the profit will be distributed in proportion to the amount of hauling furnished.

Cobleigh Now Secretary of N.A.C.C. Export Committee

H. R. Cobleigh, who has been managing editor of the Automobile Trade Journal, Philadelphia, has joined the National Automobile Chamber of Commerce staff, at the general offices in New York. He will act as secretary of the export committee. Mr. Cobleigh has had long experience in engineering and editorial fields.



Courtesy of The B. F. Goodrich Rubber Co., Akron, Ohio

Ridding This Country of Another Phase of Bolshevism

Trade Literature

"How Business With Foreign Countries is Financed."—Guaranty Trust Co. of New York, 140 Broadway, New York City.—A booklet of value to exporters, importers and others having business or financial relations with foreign countries. The booklet contains twenty-eight reproductions of specimen forms of drafts. letters of credit, bills of lading, invoices, and other documents generally used in connection with the financing of exports and imports. Explanatory notes accompany each illustration and the use of the documents is explained when that seems necessary. Special attention is given to those which bear directly upon the development of dollar exchange. The booklet is carefully indexed and contains a table of currencies of various countries and their value in United States dollars.

This booklet will be sent on request to manufacturers, shippers, and others interested in foreign trade.

The Ultimate Motor Truck Wheel-Dayton Steel Wheel Co., Dayton, Ohio. The purpose of this book, as explained in the Foreword is "to point out the remarkable progress that has recently been made in the development of wheels for motor trucks." Section one is devoted to an outline of the evolution of the vehicle wheel; section two discusses the qualities to be considered in the building of a motor truck wheel; section three is devoted to a description of the processes in the manufacture of a Dayton Steel Wheel, and section four contains indorsements of Dayton Steel Wheels.

Klaxon Equipment Book—Motor Equipment Division of Klaxon Co., Detroit, Mich. Contains information of value to manufacturers and dealers of cars using Klaxon equipment. The way to clean oil and adjust Klaxon warning signals, instructions on wiring, and facts about the Klaxon hand-operated signals for cars, trucks and motorcycles are included in the book. The book contains also a list of 65 United Motors Service, Inc., branches giving Klaxon service.

Introducing the Makers of Diamond Chains.—Diamond Chain & Mfg. Co., Indianapolis, Ind.—A booklet prepared for the company's export trade. It gives a history of the formation of the company, a description of the plant and facilities and introductions to the personnel of the organization.

Booklet No. 220—Link-Belt Co., Chicago, Ill.—This booklet describes and illustrates the Peck overlapping pivoted bucket carrier, for use in loading and unloading coal, coke, ashes, cement, sand, ore, stone, etc. The booklet can be obtained by request from the Link-Belt Co.

Packard Motor Car Co., Detroit, has opened a new branch at St. Louis, and appointed P. S. Russell manager. Mr. Russell was formerly connected with Hale & Kilbourne, Philadelphia.

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Stock Yards Prefer Buying Cattle Hauled by Motor Truck

Cattle Reaches Market in Better Condition. Farmer Gets More for His Stock. Omaha Motor Truck Sales Rapidly Increasing

EVELOPMENT of the use of motor trucks for hauling live stock to market has not come so fast in Omaha as in some of the other large packing centers, such as Kansas City, Indianapolis, Cincinnati, etc. Nevertheless, the increase in the number of trucks used for this purpose, and in the total head of stock brought to the Omaha yards, has been such as to hold forth great promise for the very near future in that territory.

Bad roads have been the greatest handicap in the Omaha country, for the ground is soft and an open winter such as the past one, and wet weather at any other time of the year, make the roads very bad indeed for heavy motor trucks. Nevertheless, the use of trucks is constantly increasing, and many of the later truck buyers are equipping with big pneumatic tires, thus overcoming the obstacle of bad roads to a great extent.

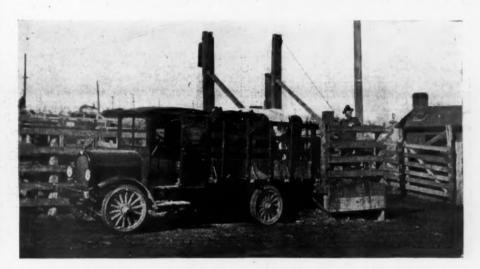
Figures on the quantity of stock delivered to the Omaha stock yards in the past two years show plainly the coming of the motor truck in this work. In the first nine months of 1917 only 52,129 hogs were brought to the yards by truck, while in the same period of 1918, 142,220 hogs, or an increase of 90 per cent., were delivered at the yards by motor truck.

From July to September, 1917, inclusive, 12,189 head of cattle were brought in by truck, and in the same period during 1918, the figures showed 17,681, a very good increase.

Motor truck dealers in Omaha and surrounding cities are looking forward to a big business, not only with companies who will handle this live stock business as a transfer business, carrying freight of various sorts on the return trip out into the country districts, but also with the farmers of Nebraska and Iowa, who are fast learning that motor trucks for use on their farms will prove a very good investment.

The farmers of the Omaha territory have never been richer than they are to-

It is stated that one of the best barometers of the farmers' purchase of motor trucks in the Omaha district is the constantly increasing business of those commission firms that buy exclusively the stock delivered by motor truck. The constantly increasing delivery of stock by motor trucks owned by farmers with-



A Kissel Motor Truck Discharging Its Load of Cattle at a Special Unloading Gate at Omaha Yards

day. Crops have been, for the most part good, with prices well up. Sales of the better class of motor trucks have been very encouraging, and in some instances the investment in a big truck, with pneumatic tires and a body of the very best all 'round type, has been well in advance of what the eastern farmer would purchase under similar circumstances

in a radius of fifty miles of Omaha is shown in the business being done by these firms.

Motor truck manufacturers who are seeking to extend distribution of their trucks are establishing agencies in the Omaha district, several new distributing connections having been made there during the past six months by well known producers of motor trucks.



Diamond T Motor Truck, With Combination Farm Body, at Omaha Stock Yards



A GMC Motor Truck Loaded With Cattle Waiting Its Turn to Unload at Omaha Yards

Controller: Gn-El—General Electric Co. West—Westinghouse

KEY OF ABBREVIATIONS

Used in the Specifications of Commercial Cars Listed on the Pages Following

Shk—Shakespeare Sheb—Schebler Spc—Special Till—Tillotson Strm-Stromberg Ens—Ensign Fleh—Flechter John-Johnson Mas—Master Mill—Miller Cart—Carter Mar-Marvel Holl-Holley Zen-Zenith How Cooled: C—Centrifugal Pump H-Sp—Herschell-Spillman Lite—Light Mfg. & Foundry Co. Valve Location: L—ELL-Head T—TEE-Head Engine: Cont—Continental P—Water Pump T—Thermo-Syphon W—Water Ster—Sterling Wau—Waukesha Wis—Wisconsin Lyco-Lycoming Own-Own Make Opt-Optional G—Gear Pump Hercules 0-Overhead

Ignition System: (Make or Type) At-Kt-Atwater Kent Conn—Connecticut Delc—Delco POL-Prest-O-Lite Au-L—Auto-Lite Bat—Battery Bosh—Bosch Eism-Eisemann Mag—Magneto NE—North East King-Kingston Berl-Berling Simms Dix-Dixie Radiator (Make or Type): Bus-Bush

Can—Candler EM—English-Mersick Eur—Eureka Fed—Fedders

Engine Starter: Au-L-Auto Lite G&D—Gray & Davis L-N—Leece-Neville West-Westinghouse -Dyneto Bosh-Bosch Bij-Bijur

Spld-Splitdorf

Lng—Long
McC—McCord
May—Mayo
MR—Marlin-Rockwell
Per—Perfex
R-T—Rome-Turney
Stan—Standard

C-Cellular -Tubular

JMS-Jamestown

Hovn—Hooven Idl—Ideal

Har-Harrison

GO-G. & O. Flex-Flexo

L—Brown-Lipe M—Merchant & Evans (Hele-Shaw) G-Detroit Gear & Machine Clutch: B-Borg & Beck H-Hartford W-Warner O-Own -Muncie F-Fuller -Cone Fires: (Solid unless otherwise stated). Lubrication: C—Centrifugal Pump Fo—Force-Feed
FG—Force and Gravity
FS—Force and Splash
Sp—Splash Feed
P—Water Pump H-Honeycomb *-Pneumatic S—Steel T—Triple D-Dual

Fransmission: B-Lipe—Brown-Lipe G-Lee—Grant-Lees I-CI—Individual Clutch MM—Mechanics Machine Co. Prog-Progressive Rock-Rockford Munc-Muncie Plan-Planetary Durst-Durston -Selective Warn-Warner Covt-Covert Det-Detroit Full—Fuller Cott-Cotta Carburetor: B&B—Ball & Ball

Hart—Hartford K-B—Kinsler-Bennett M—Merchant & Evans Universal: Arv-Arvac Drive: B-Bevel Gear Bld—Blood Brothers Ct—Concentric Spur SB—Spiral Bevel -Internal Gear Sp—Spur W—Worm F-Friction R—Roller S—Shaft -Chain 0-0wn

UP-Universal Products Co. Rear Axle: Cel—Celfor Timk—Timken Torb—Torbensen W-M—Weston-Mott Emp—Empire Rock—Rockford Russ—Russel Sals—Salisbury Shel—Sheldon Cl—Clark

Flot—Full Floating
1/2-Fl—Semi-Floating
2/4-Fl—3/4 Floating
1/8-Fl—1/8 Floating

Elip—Full Elliptic S-El—Semi-Elliptic ¾-El—¾-Elliptic S&C—Semi-Elliptic and Cantilever S&¾—Semi-Elliptic and ¾-Elliptic Spring Suspension: CC—Cleveland-Canton Shel—Sheldon SP—Spring Perch Stan—Standard Ster—Sterling US-United States Kal-Kalamazoo Cant—Cantilever Mar-Maremont Per-Perfection Math-Mather Row-Rowland C-Iron City Nat-National Det-Detroit Tut-Tuthil

Steering Gear: CAS—C. A. S. Products Co. Dit—Ditwiler Wohl-Wohlrab Gem-Gemmer Warn-Warner Lav-Lavine Jac-Jacox W-Worm

Governor: C—Centrifugal Cont—Continental Dup—Duplex McC—McCanna Mon-Monarch Rug-Ruggles Del-Delaney Mer-Merrill

UM-Universal Machine Co.

her-Thermoid

Spic-Spicer

EXTRA ABBREVIATIONS USED ON Motor: Gn-El—General Electric Co. West—Westinghouse ELECTRICS Battery: Exid-Exide Phil—Philadelphia Simp—Simplex Wau—Waukesha Edis-Edison

West-Westinghouse

78-FI-78 Floating

Gasoline

Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Tractor-Trucks and Electric Commercial Cars Will be Found at the End of Gasoline Commercial Cars

(Where prices are not given they may be had on application to the manufacturer)

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Manufacturers Whose Models Are Included in Specifications on Preceding Pages

Acason—Acason Motor Truck Co., Detroit, Mich.
Acme—Acme Motor Truck Co., Cadillac, Mich.
All-American—All-American Truck Co., Chicago, Ill.
Armleder—O. Armleder Co., Cincinnati, Ohio.
Atlantic—Atlantic Electric Vehicle Co., Newark, N. J.,
Atlas—Martin Truck & Body Corp., York, Pa.
Attas—Martin Truck & Body Corp., York, Pa.
Atterbury—Atterbury Motor Car Co., Buffalo, N. Y.
Autocar—Autocar Co., Ardmore, Pa.
Available—Available Truck Co., Chicago, Ill.
Beck-Hawkeye—Beck-Hawkeye Motor Truck Wks., Cedar Rapids,
Iowa. Atterbury—Atterbury Motor Car Co., Buffalo, N. Y.
Autocar Co., Ardmore, Pa.
Bethlehem—Available Truck Co., Chicago, Ill.
Beck-Mawkeye—Beck-Hawkeye Motor Truck Wks., Cedar Rapids, Bowa.
Bessemer—Bessemer Motor Truck Co., Philadelphia, Pa.
Bethlehem—Bethlehem Motors Corp., Jackson, Mich.
Briscoe—Briscoe Motor Corp., Jackson, Mich.
Briscoe—Briscoe Motor Corp., Jackson, Mich.
Brickway—Brockward Truck Co. of America, Philadelphia, Pa.
Brickway—Brockward Truck Co. of Mich., Flint, Mich.
Corp. Chevrolet Motor Co. of Mich., Flint, Mich.
Corp. Chevrolet Motor Co. of Mich., Flint, Mich.
Collier—Collier Motor Truck Co., Bellevue, Ohio.
Colliele—Collier Motor Truck Co., Bellevue, Ohio.
Colliele—Comet Automobile Co., 156 S. Water St., Decatur, Ill.
Comet—Comet Automobile Co., 156 S. Water St., Decatur, Ill.
Comet—Comet Automobile Co., 156 S. Water St., Decatur, Ill.
Comet—Corp. Motor Truck Co., Lancaster, Pa.
Corplies—Corbitt Motor Truck Co., Lenderson, N. C.
Corlies—Corbitt Motor Truck Co., Waterloo, Ia.
Day-Elder—Day-Elder Motors Corp., Newark, N. J.
Dearborn—Dearborn Truck Co., Chicago, Ill.
Defance—Turnbull Motor Truck Co., Waterloo, Ia.
Day-Elder—Day-Bether Motors Corp., Newark, N. J.
Dearborn—Dearborn Truck Co., Detroit, Mich.
Diehl—Diehl Motor Truck Co., San Francisco, Cal.
Dophy—Denby Motor Truck Co., Co., Minneapolis, Minn.
Doane—Doane Motor Truck Works, Philadelphia, Pa.
Dispatch—Dispatch Motor Car Co., Minneapolis, Minn.
Doane—Doane Motor Truck Co., San Francisco, Cal.
Dodge—Dodge Bros., Detroit, Mich.
Diria—Dorris Motor Car Co., Minneapolis, Minn.
Doane—Doane Motor Truck Co., Co., Mincapolis, Minn.
Doane—Doane Motor Truck Co., Co., Mincapolis, Minn.
Doane—Doane Motor Truck Co., Co., Mincapolis, Minn.
Doane—Doane Motor Truck Co., Co., Cicago, Ill.
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Larrabee-Deyo—Larrabee-Deyo Motor Truck Co., Inc., Binghamton, N. Y.
Lowley Lower Larrabee Larrabe

Organizing a Rural Motor **Express Line**

Under this title, the National Motor Truck Committee of the National Automobile Chamber of Commerce, 7 East 42nd St., New York City, has issued a booklet giving information on the proper method of organizing a rural motor express line. The booklet calls attention to the services which can be rendered by rural motor express lines and it tells how the scale of charges must be determined and what details should be noted in making a preliminary survey of the route

over which the trucks are to travel. It tells how the canvass of prospective customers can be carried out; how the owner can boost his business by an advertising campaign. It also gives vital suggestions concerning operating methods and how to deal with farmers. The booklet is written especially for individual carriers and small operators, and contains a great deal of information which the prospective operator should know. Motor truck dealers would do well to have a copy of this booklet on hand to give to prospective customers, who are contemplating going into the rural motor express business.

Training Labor for Peace Time-U. S. Training Service, Department of Labor, Washington, D. C .- This pamphlet deals briefly with the advantages to the manufacturer of the maintenance of a training department. It points out that, if foreign markets are to be opened to American manufacturers, it can only be done by raising the national average output, and that in turn, can be accomplished only by increasing the production of the individual through intelligent, widespread industrial training of the workers. This bulletin is one of several being issued for free distribution by the U. S. Training Service.

NEW COMMERCIAL CARS











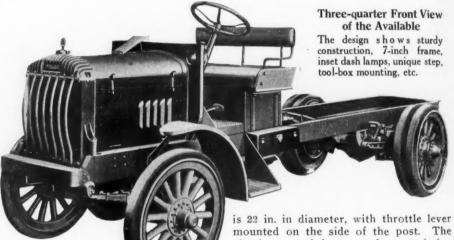
Available Announces New Model of Three and a Half Ton Capacity

N looking over the specifications of the new 31/2 job, model H3, announced by the Available Truck Co., 1501-49 N. Kilpatrick Ave., Chicago, Ill., one is impressed by the thoroughness with which the selection of standard and well known units has been made. Throughout the whole design the factors of safety and strength have been given utmost consideration. In addition to this model a 2-ton pneumatic speed job is now being tested out by the factory, details of which will be announced later. The entire line of the Available company now includes a 2-ton, model H2, listing at \$2950; a 31/2-ton, model H31/2, at \$4200, and a 5-ton, model H5, at

The engine is a Continental Red Seal, model E4, bore 4½ in., stroke 5½ in., cylinders cast in pairs. Ignition is by a Bosch high tension DU4 magneto. A kick switch is located on the footboard, convenient for the driver's right foot. The carburetor is a Stromberg M2, 11/4 in.; vertical type intake manifold cast integral with exhaust manifold. The truck is governed by a Pierce governor, set at 14 m.p.h., and driven direct from the

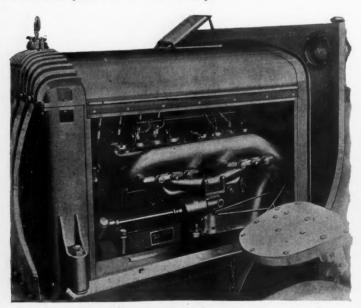
The clutch and transmission are both of Brown-Lipe make. The clutch is provided with an oil cup, which is placed on the dash, for the purpose of lubricating the thrust bearing, thus obviating the necessity of removing the floor board every time this operation is necessary. The transmission provides four speeds, is three-point suspended and is mounted amidships. A power take-off is provided

by the front propeller shaft. The control levers are also of Brown-Lipe make, and are mounted in center of foot boards on cross member of the frame. The gear shift lever has a catch to prevent accidental shifting into reverse. The steering gear is a Lavine, mounted on the left at a convenient angle. The wheel

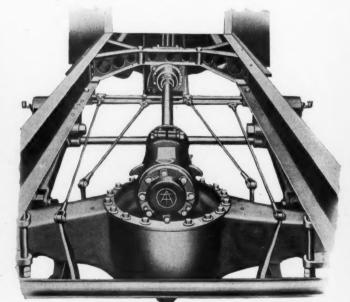


clutch, control levers and transmission are separately removable.

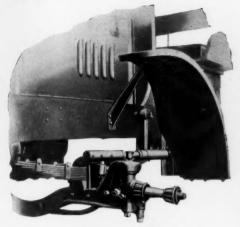
The front axle is a Timken, bearing in spindle head type; tread, 661/2 in.



Note High Setting of Engine Which Makes for Accessibility The fenders are set well back so that they do not interfere when making adjustments to the engine; the sides of the hood are removable. The radiator is spring mounted and is provided with a one-half inch drain-cock. ventilator on top.



Showing the Brake Levers, Cross Member and Rear Axle The brake equalizer bars are mounted in slotted members at the side of the frame. Note the absence of springs on the brake equalizer bars. The only springs used in this design are the ones employed in the brakes.



Drag Link, Mounting of Fenders, etc. The rear end of the front spring is about two and a half inches lower than the front end, and the axle is inclined toward the rear, which gives a castor effect to the wheels.



Rear Shackle and Brake Drum Mounting It will be noticed that the brake drums are fastened to the rear wheels by U-shaped bands, thus obviating the necessity for drilling the spokes and insuring maximum strength.

The rear axle is a Timken worm and gear; ratio 10 1-3 to 1; tread, 651/2 in.

The propeller shaft, between the transmission and rear axle, is of tubular construction. Spicer universal joints are used on this shaft, while in front of the transmission a Thermoid joint is employed.

The driving strain is taken by radius rods which also keep the rear axle in perfect adjustment. Brakes are 21 in. diam., the drums being banded to the spokes. Both service and emergency brakes work through equalizing bars, the layout of which is shown in an accompanying illustration. The brake rods are attached in such a manner that one short and one long rod are connected with the service brakes and one short and one long rod with the emergency brakes. The wheels are Schwarz make, front, 36 x 5 in., 14 spokes, 21/2 in. oval; rear, 40 x 5 in., dual, 14 spokes, 31/4 in. oval.

The springs are Tuthill, bronze bushed throughout; front, 42 in. by 3 in.; rear, 52 in. by 31/2 in.

The radiator is made up of a cast tank, with removable core, finned tubes flattened, which minimizes damage by freezing. The radiator has a large capacity. to insure positive cooling under all con ditions. A 1/2-in. drain cock is provided. The radiator is mounted on double springs, which are enclosed and work in oil. The hood is made up of three pieces. The side pieces are removable, and when in place are held by strong springs which eliminate rattle and vibration. The radiator is protected by a heavy bumper attached to the frame and seven steel ribbed guards in front of the core.

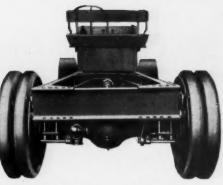


How the Seat is Attached to the Frame The feature of this design is that the seat can always be kept tight by drawing up on the bolts which extend through the upright strap-iron bars that hold the seat to the frame.

Fenders and steps are made of heavy gage sheet steel. The edges of the fenders are reinforced with steel angles. The steps are of original design. They are made of extra heavy sheet steel and are securely riveted to the frame. Both the steps and floor boards are lined with oak strips, which provide a better under-footing for the operator. The tool box is built integral with the step.

The frame is notable for its size. It is made up of hot rolled sections, 7 in. diameter, 2 13-64-in, flange width, and 5-16 in, side thickness. The gusset plates are 12 x 12 x 1/4 in. Width of frame is 36 in.

The wheelbase is 156 in., short stan-



Showing Low Frame on Available

dard; long standard, 172 in. The short wheelbase provides 12 ft. of frame behind driver's seat, while the long wheelbase gives 14 ft. of loading space. Optional lengths at extra cost.

Especial attention is called to the front axle mounting. By dropping the rear ends of the front springs about 21/2 in., which tends to slant the axle toward the rear, and by mounting the drag link parallel to the frame, a castor effect is given to the wheels, which makes for easier steering and prevents wobbling of the front wheels under adverse road conditions. All wearing points throughout this truck are phosphor bronze bushed, while lubrication is provided by oil cups.

Weight of chassis with driver's seat. is 6400 lb. Pay load, 7000 lb. Body allowance, 2000 lb.

Standard painting includes chassis and seat, green; hood, radiator and fenders, black; wheels, red.

Equipment includes 20-gal. gasoline tank; driver's seat; three oil lamps; 36 x 5 tires front; 40 x 5 dual, rear; tools and horn.

Autocar Has 120-inch Wheelbase

The Autocar Company, of Ardmore, Pa., announces that in addition to the standard 97-in. wheelbase with a chassis price of \$2050, it now has ready for distribution a 120-in. wheelbase, with a chassis price of \$2150. Both are rated at 11/2to 2-ton capacity. The shorter wheelbase accommodates bodies up to 10 ft. in length, and the longer, bodies up to 12 ft.

This longer wheelbase Autocar was designed to meet the hauling needs of certain lines of business, where the average load tends to bulk. This new chassis is identical in construction with the standard chassis, except that longer frame members, brake cables and drive shaft are used, and an extra cross-member added at the front end of the rear side springs. Retaining all of the dismodel extends the many advantages of that design to an even broader scope of hauling requirements.

With the engine under the seat, even this longer wheelbase is still two feet shorter than would be possible with the same body, and the engine under a hood, as in the ordinary passenger car construction. The great factor of unusual handiness is thus retained.

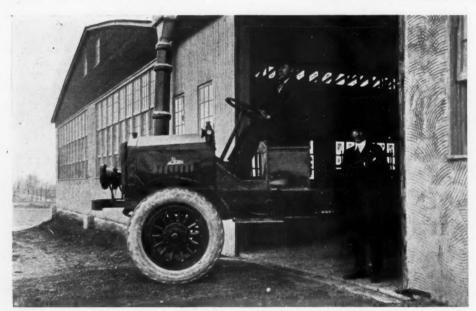


Rowe Three-Ton Truck Designed Especially for Pneumatic Tires

GREAT deal of discussion has been going on in the trade as to the feasibility of mounting pneumatic tires on trucks that are essentially built for solid tires. Those who have given this matter serious attention claim that the truck built for solid tires is not suitable for pneumatics, in that the changing over from solids to pneumatics will not permit running the motor truck at greater speeds, without impairing the efficiency of the engine, burning out bearings, etc. Under certain conditions where the factor of speed is not essential, no criticism is made, but in connection with intercity



The Rowe Three-Ton Model G.W. High-Speed Pneumatic-Tired Chassis



The Rowe Three-Ton Job Looks Speedy and It is Speedy Vice-president Allen (standing) says it is built to do thirty-five miles per hour as a regular thing

and long distance hauling, where time must be saved, a truck built especially for pneumatics is necessary in order that the best results may be obtained.

In order to overcome such objections the Rowe Motor Mfg. Co., of Lancaster, Pa., designed a truck especially for use with pneumatic tires, and which they state is the first job on the market built for this purpose.

This latest addition to the line, known as the Rowe Model G.W. 3-ton high speed pneumatic tired chassis, employs the worm drive, as do the other models of the Rowe line. To those dealers who are not acquainted with the Rowe company, it might be stated that this company started building trucks eight years ago, and was one of the first companies to utilize the worm drive. The Rowe line consists of four models, besides the one herewith described, as follows: 2-, 2½-, 3½- and 5-ton. For complete specifications of these models see the "Specification Table" in this issue.

Specifications of the Three-Ton Speed Job

Although this model contains a number of well-known standard units, it is by no means an all-assembled proposition, as some of the parts are original with the Rowe company; for instance, the frame, wheels, fenders, bumpers, etc. The rear wheels are cast from patterns made up by the Rowe company engineers, and tooled in the Rowe shop, while the frame is also built up in the Rowe plant. The frame is of original design, made from high carbon steel, of channel section, 6 in. by 2 in., and a width of 33 in. The frame is extremely light in weight in comparison with frames of solid tire trucks of the same capacity. Throughout the whole design the factor of weight has been given careful attention, in that parts are used, which, if used in trucks utilizing solid tires, would not be suitable for a 3-ton proposition, as for example, the springs and the axles. The front spring is of 21/2 in. width, whereas the rear springs are

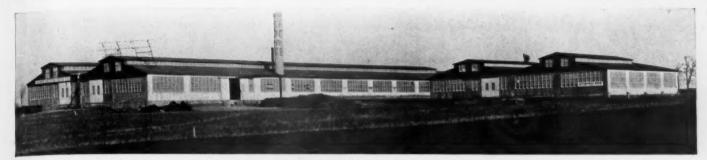


An Interior View of the Rowe Company's Assembly Plant

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The Rowe Motor Manufacturing Company's Plant at Lancaster, Pa.

The main building is 300 feet long by 120 feet wide. The small buildings are 120 feet wide by 100 feet long. The plant has been practically doubled since April 1st, thus permitting a production schedule of ten trucks per day

3 in. in width. The front axle is a Sheldon Type 3-FA-10, whereas the rear axle is a Sheldon worm axle Type W-21. These same axles, used with solid tires, would be suitable for a 2½-ton truck. The chassis complete weighs 5500 lb., but with the addition of the standard cab and stake body, the weight of the chassis is about 7000 lb.

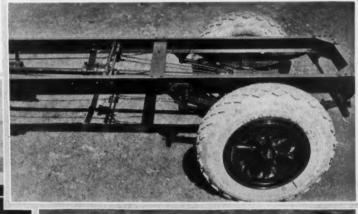
Particular attention is called to the size of pneumatic tires used. The tires in front are 38 x 7, and in the rear 42 x 9, an option being given on either Firestone or Goodyear make. The maker states that if the same size truck, built for solid equipment with pneumatics were used, it would be necessary to use

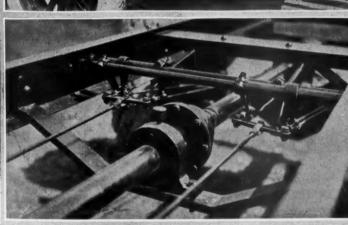
hour without the least difficulty, and without any tendency to strain or subject any of the truck components to undue wear.

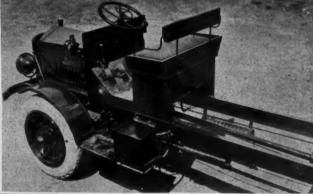
This speed is made possible by the use of an 8-cylinder Herschell-Spillman engine having 3½ x 5-in. cylinders, and rated at 50 hp. The transmission is a Brown-Lipe, four-speed type, while the clutch is also Brown-Lipe make, multiple disc type. Other specifications are

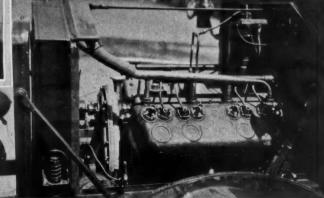
as follows: Zenith carburetor; Ross worm and nut steering gear; Stewart vacuum feed with tank under seat; gasoline tank capacity about 25 gal.; Westinghouse starting and lighting system; Willard storage battery; Atwater-Kent distributor; wheelbase 170 in., tread 60½ in.; length of truck over all 18 ft. 8 in.; length of frame in back of the driver's seat 144 in. The price of this job is \$4500, f.o.b. factory.

Detail Views of the Rowe Speed Model









The dash and seat are made of steel; fenders are well braced and reinforced at edges; the propeller shaft support is simple and well supported; frame is of special design, built in Rowe shops; radiator is mounted in conventional manner and is protected by a heavy guard.

much larger tires. The maker states that with the size tires employed and a full load, this model will do 35 miles per Selden Announces One and a Half Ton Worm-Drive

Model at \$2185

HE Selden Truck Sales Co., of Rochester, N. Y., has just announced a new model known as "The Selden Special" on which deliveries were started April 21. This is a 11/2-ton truck with Timken worm drive rear axle, listing at \$2185. This model will supersede the model TWL, which will be discontinued.

The Selden Special has a wheelbase of 140 in., and a turning radius of 23 ft. Tire equipment consists of 34 x 31/2 single in front, and 34 x 5 single, in rear-Goodyear and Firestone solid tires are furnished as standard equipment. An

Two Views of the 'Selden Special' One and a Half Ton Job



extra charge is made for pneumatic equipment.

The length of the frame in back of seat is 9 ft. 6 in., and the height of the frame from ground loaded is 34 in, and unloaded is 37 in. The equipment includes two oil side lamps, one oil tail lamp, mechanical horn, kit of tools and jack. At price quoted the new model is furnished in paint. This model is equipped with a Pierce centrifugal type governor set for 18 miles on high gear.

General Specifications

The new model includes a great many standard and well known units, as follows: Continental Red Seal Motor, Model N, 4-cylinder, 33/4 bore, 5 in. stroke; Stromberg carburetor; high tension magneto with set spark; circulation by thermo-syphon system; vertical tube radiator of built up type with cast tanks and removable core mounted on ball trunnions: hand throttle on steering post, also foot accelerator; Brown-Lipe dry plate, multiple disc clutch and Brown-Lipe selective, three speed sliding gear; Spicer double universal joints between transmission and rear axle with tubular drive shaft; right-hand drive.

The gear reduction and rear axle is 7 to 1 and 23.3 to 1 on low; the steering gear is of the worm and nut type, with 18-in. diam. steering wheel, irreversible. The front axle is an I-beam, 25% in. deep and 134 in. wide; the rear is a Timken David Brown worm with taper roller bearings; tread is 58 in. Internal expanding, service and emergency brakes on rear wheels; wood wheels 34 x 31/2 front and 34 x 5 rear. Gasoline tank under the seat, capacity 20 gal.

The Tower Three and a Half Tonner

HE latest product of the Tower Motor Truck Co., of Greenville, Mich., is the three-and-one-halfton model, which, with driver's seat, fenders, oil lamps, tool box, hand horn, etc., including cab, is priced at \$4100 f.o.b. It is composed of standard units and the complete chassis weighs 6800 lb. The wheelbase of this new model is 165 in., which provides 14 ft. of space back of the seat.

The engine used in this new job is a Continental type E-4. It has four cylinders, cast in block, bore 41/2 in., stroke 51/2 in., and is rated at 32.23 hp. but develops 45 at 1500 r.p.m. Lubrication is by a positive plunger pump system and constant level. Cooling is by centrifugal pump and 4-blade fan, operating on ball bearings. The truck speed is governed by a Pierce governor, driven from the transmission, permitting the speed of the truck to be regulated independent of the engine speed. Bosch magneto and Stromberg carburetor are standard equipment.

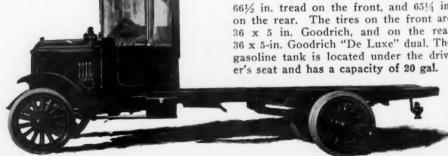
The clutch is a Fuller, multiple dry disk, and the transmission is also Fuller make, of the selective type, with 4 speeds forward and 1 reverse.

The transmission has annular ball

bearings and it and the clutch are mounted in unit with the engine. Drive from the transmission is by Spicer tubular shaft with three universal joints. Final drive is by the Timken David Brown, worm and worm gear, the rear axle being a Timken, full-floating, with Timken roller bearings. The front axle is also a Timken, I-beam, with Timken roller bearings, The brakes are duplex internal expanding, 21 in., the service brake operated by the pedal and the emergency brake by the hand lever. The brakes are equipped with an automatic adjusting device.

The radiator is cast-iron shell; tubular cores. The shell is made in four pieces, flanged and bolted, and permits the core to be readily detached for cleaning or repairing. The frame is heat-treated alloy steel channel, 4 x 7 in., and tapered. It has heavy cross members, bracing the frame very securely. The springs are of Detroit Steel Products make, of carbon steel except the main leaves of the rear springs, which are of silico-manganese steel. All springs are semi-elliptic, front 44 x 3 in., with 11 leaves, and the rear 56 x 31/2 in. with 14 leaves. The radius rods provide direct connection between the driving axle and the frame and relieve the rear springs from driving stresses. These radius rods are I-beam sections and have steel bushings. They are adjustable through the front and

swivel connections. The wheels are wood, artillery type, 661/2 in. tread on the front, and 651/4 in. on the rear. The tires on the front are 36 x 5 in. Goodrich, and on the rear 36 x 5-in. Goodrich "De Luxe" dual. The gasoline tank is located under the driver's seat and has a capacity of 20 gal.



Tower Three and a Half Ton Model, as Shown, With Cab and Equipment Lists at \$4100

TRUCK EQUIPMENT AND APPLIANCES



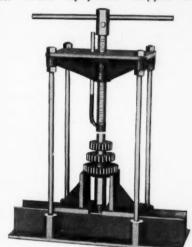




The Whitney Arbor Press

The R. S. Whitney Mfg. Co., 74 Nichols St., Lewiston, Me., is manufacturing the Whitney Arbor Press in 30- and 50-ton capacities. These presses are unusually light in weight for their capacity, making transportation easy. Simplicity of construction is also a feature, since the presses have no gears, weights, wheels, cables, etc.

The screw has a square thread. The base is provided with ways, as is a lathe which allows the blocks to slide, thus permitting the handling of difficult work. A large recess through the base permits shaft or arbors to pass through regardless of length. The head is also removable. Extra equipment shipped with



The Whitney Arbor Press

these presses includes two sliding blocks, a sliding V-block and one extension V-block. The No. 1, or 30-ton press, is 30 in. high, the length of the screw is 17 in. and the diameter is $1\frac{1}{2}$ in. The travel of the screw is 8 in. It weighs 156 lb.

The No. 2 press is 35½ in. over all; the screw is 20½ in. by 2 in., with 8-in. travel. The weight is 387 lb.

Battery Separators

The Ferry-Mark Mfg. Co., of St. Louis, Mo., is a manufacturer of battery separators, plates and battery supplies. This company is making a special feature of its separators which are made and treated under the company's own patent. Supplies for the small shop battery repair man have been added lately. Plates, separators, sealing compound, acid proof paint, etc., are shipped in one case to the smaller dealers. Orders are also handled for jobbers, shipping separators direct to their customers. In this way the jobber avoids the necessity of carrying a stock of odd sizes.

Jones Hub Odometer

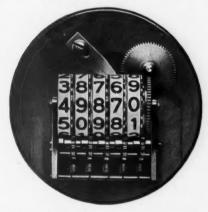
In the operation of a motor truck the advantage of a reliable mileage-recording device is obvious. The Jones Hub Odometer, Type P, made by Jones-Motrola, Inc., 29-33 West 35th St., New York City, has several unusual features.



The Jones Hub Odometer
The large numerals facilitate reading

In the face illustration of the instrument shown, its neat and compact appearance is apparent. The odometer is attached to the hub of the front wheel, and records the mileage travel of any truck in cumulative totals up to 100,000 miles and then automatically repeats.

One of the features claimed by the makers is that the type P employs a special graphite-treated packing which



Mechanism of the Jones Hub Odometer

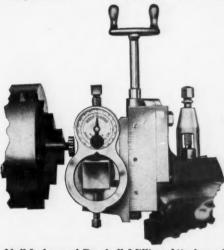
precludes any possibility of grease or oil entering the instrument, and that even if grease or oil were permitted to enter, it would not affect the recording, due to the large recording figures. The price of this instrument, including hub, cap and special driving pin for axle, is \$36.

The cap of the instrument is a heavy stamping and the base a casting. Index pinions, pawls, and driving gears are of brass and the driving worm is steel.

Equipment for Doing Milling on a Lathe

The Paschall Tool Co., Inc., Long Beach, Cal., is marketing two articles of equipment for the lathe, such as that used in garages and machine shops. The Paschall attachment is especially useful where there is more or less mill work of a light character, such as axle squaring, key cutting, slotting and grooving to be done, as each garage or machine shop cannot afford to carry a machine devoted exclusively to this work, since the amount of work to be done is limited.

The latest model of Paschall Lathe Attachment for milling is known as Model G. This new type is neat and strong and well balanced, and fits the compound rest of the lathe. It is not



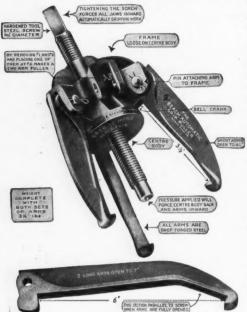
Neff Index and Paschall Milling Attachment This illustration shows the Neff Index working in combination with the Paschall Milling Attachment in squaring the end of the shaft.

bulky or excessively heavy and is easily attached and lined up. The net weight is about 17½ lb.; height 6 in.; length 12 in. Price, f.o.b. Long Beach, is \$25.

The Neff Index is a time and labor saver. It is to the shaper, drill press and planer what the heavy and expensive index head is to the milling machine. There is practically no shaping machine or tool with which this instrument cannot be advantageously used. It is ideal for laying off squares, hexagons, octagons, etc., lining up or offsetting keyways, lining up or offsetting drill press work and innumerable other operations. It is especially useful with such devices as the Paschall Lathe Attachment. It is made in two sizes, No. 1, which is best suited for average machine shop work, for material up to 21/2 in. in diameter and sells at \$7.50, and No. 2, designed for shops handling larger shafting principally. It will handle material up to 4 in. in diameter-price, \$10.

The Greb Automatic Grip Puller, Junior Size

The Greb Automatic Grip Puller is now being manufactured in the junior size. This useful tool is for removing



The Junior Size Greb Puller

A well-known Greb Puller is now being manufactured in the junior size. The price is \$16

timing, magneto and pump shaft gears on couplings, and is efficient for all small work of this kind. It sells, complete with two sets of arms, for \$16 east of the Rocky Mountains and \$17 west. The weight with both sets of arms is $3\frac{1}{4}$ lb.

The screw is of hardened tool steel and is 9-16 in. in diam. The frame is loose on the center body; the arms are drop forged steel and are pinned to the frame; the pressure applied at the bottom of the hardened screw will force the jaws inward and the center body back, automatically gripping the work. The Greb Pullers are made by the Greb Co., Inc., 172 State St., Boston, Mass.

Kellogg Products Improved

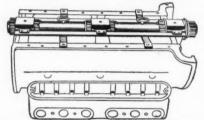
The Kellogg Mfg. Co., of Rochester, N. Y., has recently made improvements in its Combination Grease and Oil Gun, and its three-barrel hand pump. The grease and oil gun is of good material and strongly constructed. The powerful cut rack and pinion movement give

ample leverage so that heavy grease can be handled with ease and speed, and the piston insures complete filling whether light oil, heavy oil or grease is used. The hand wheel has been improved in shape, insuring a good grip without injury to the hands in any way. The barrel of the gun is $8\frac{1}{4} \times 1\frac{5}{8}$ in., and has a capacity of 8 oz. The price is \$2.50.

The Three Brass Tubes Compound Pump is nickel plated and delivers a high pressure. All the hard work is done on the down stroke, where the weight of the body helps lessen the effort required. The price of this pump The handle, the hose connection is \$6. and the base of this pump have been improved since it was last described. The foot piece is now ribbed, making it much stronger, and the hose, 36 in. long, is equipped with a separate connection for the tire valves. The handle is also of generous size and finished in slightly different shape to prevent blistering the hands.

The Hempy-Cooper Machine

The Hempy-Cooper Boring Machine, for boring the main bearings in Ford and Fordson cylinder blocks and the babbitting jigs for re-babbitting the same are claimed to save time and expense for the garageman. The time consumed in this operation is said to be not over thirty minutes. These machines, if once



Manner of Attaching the Babbitting Jig to the Cylinder Block

installed in the shop, make it unnecessary to send away cylinder blocks for rebabbitting and re-boring crankshaft bearings, and make it possible to install new crankshaft bearings every time you overhaul an engine. These machines are guaranteed to do the work accurately and satisfactorily. They are made by the Hempy-Cooper Mfg. Co., Kansas City, Mo. The model T sells for \$125, and the Fordson Tractor outfit for \$150. A gage for correctly setting cutting tools is furnished with each outfit. The weight when boxed is about 70 lb.



Niagara Gasoline Meters

The Niagara gasoline meters measure gasoline sold from systems operated by gravity, air or hydraulic pressure pumps. The dial is vertical, 6 in. in diameter. A large hand indicates pints, quarts and gallons. A knurled thumb piece pro-



A Niagara Gasoline Meter
A straight-reading register, which cannot be set back, counts the gallons from one to one hundred, and repeats.

jects through the gears so the hand may be turned back and automatically stopped at 0. A straight reading register which cannot be set back counts the total gallons from one to one hundred and repeats. It is made by Buffalo Meter Co., Buffalo, N. Y. Size B sells at \$40, size C at \$50.

Taber Combined Muffler and Cut-Out

This invention was brought out by a Ford mechanic in answer to the widespread demand for a muffler that would not blow out, would not clog up and one that offered the least possible resistance to the passage of explosive-gases. It is claimed that the Taber reduces back pressure to a minimum; that it will not blow out because it is cast in one piece; that the back pressure is minimized, because the function of silencing the explosions is accomplished through expansion, without resistance to the passage of the gas. The company does not claim, however, that it eliminates back pressure altogether, but that actual engineering tests prove that back pressure is decidedly lessened, and because of that fact more miles per gallon of gas can be obtained.

The illustration shows the outfit, consisting of muffler cut-out chamber, pedal, coil springs, tail pipe, etc. The Taber Muffler and cut-out retails at \$4.75 complete, and \$5 west of the Rocky Mountains, and is manufactured by the Emco-Mfg. Co., Inc., Binghamton, N. Y.

Union Garage Tool Chest

The Union Tool Chest Co., Inc., of Rochester, N. Y., has recently placed upon the market a new garage chest, designed especially for the auto mechanic. It is strictly a "garage chest" and appeals to the mechanic who realizes the advantage of "a place for everything." These chests are substantially built and are made of kiln-dried oak, ebony finish. The drawer sides are of hardwood and double-lock jointed to select oak fronts. The bottoms are three-ply veneer, tongued to sides and front, and the cor-



Union Garage Tool Chest

ners are extra heavy with polished nickel finish. There are flush ring pulls on drawers. The Union Garage Chest is conveniently arranged, as the two small top drawers are fitted with movable partitions for small parts and delicate instruments. The third drawer holds a complete set of socket wrenches. Prices for these chests range from \$9.60 to \$20 according to size.

Yankee Creeper

The Yankee Creeper, for under-car repair work, is designed to afford comfort for the workman while working in the close quarters beneath a motor car or truck.

The head-rest is a wide strip of heavy webbing stretched between two supports—hammock-like. The rest extends the whole width of the creeper, giving ample shifting room.

All of the creeper but this strip of webbing is of metal. The body is stamp-



Yankee Creeper

All metal except the head-rest, which is a heavy webbing the full width of the creeper

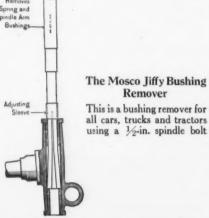
ed out of a single piece of sheet steel and forms a springy, comfortable "couch." To give it great strength, without adding unnecessary weight, the sheet has stamped ribs where desirable.

Castors underneath the frame enable the workman to move the creeper easily. Tool troughs are provided on each side.

The Yankee Creeper is virtually indestructible. It is made by the International Metal Mfg. Co., of Wayne Junction, Philadelphia, Pa.

Mosco Bushing Remover

A tool useful in the garage and repair shop, known as the Mosco Jiffy



Bushing Remover, is being manufactured by the Motor Specialties Co., of Waltham, Mass. This tool is designed to remove bushings from the steering knuckle, spindle arm and springs. It is a time saver and quickly pays for itself. It is fitted with a sleeve which keeps the split end of the tool compressed until properly located, when it is automatically released. This tool is made of steel, case-hardened and sells for \$1.50.

Coupler for Industrial Trailers

A new coupler for industrial trailers has been perfected by H. M. Woodward, designer of the Lansing Electric Industrial tractor. This coupler is particularly adapted to use on the fourwheel hand truck, having two load wheels at one end and two caster wheels at the other.

This coupler is strong and durable and can be used for pushing or pulling a trailer. It is easily coupled or uncoupled and permits the trucks to be operated at an angle with each other up to ninety degrees. This coupler also prevents side play going forward, backward or turning.



The New Carlton Coupler
This coupler, made by H. M. Woodward, 603
North Cedar Street, Lansing, Mich., can be
used with either a two or four-wheel trailer

The trailers are separated by a little more than half their width, when this coupler is used. The drawbar stays up against the end of the load when placed in that position. The coupler is made of malleable iron.

B. & D. Electric Valve Grinder

The Black & Decker Mfg. Co., of Baltimore, Md., is offering a new electric valve grinder. It is an electric motordriven device with an oscillating spindle and supplants the laborious method of valve grinding by hand. The spindle oscillates with a long steady sweep similar to the movement obtained in grinding by hand, but much more rapidly. The patented Black & Decker "Pistol Grip and Trigger Switch" makes it possible to operate and control this grinder in a convenient manner. A 1-6 hp. aircooled motor is used. It operates on



New Black & Decker Product
The electric valve grinder with pistol grip
and trigger switch

standard power circuits, either alternating current, with range 25 to 60 cycles, or direct current, for various voltages. It is constructed and lubricated the same as the various other drills and grinders made by this concern.

The Inter-State Compression Whistle

The Inter-State Tool & Mfg. Co., of St. Louis, Mo., with department of sales at 624 Michigan Ave., Chicago, Ill., is offering the Inter-State Compression Whistle. It is attached to the priming cup inlet or special spark plug. It can be installed by anyone in a few minutes on practically all makes of

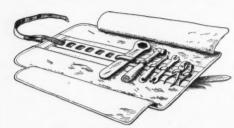


The Inter-State Compression Whistle This whistle has a peculiarly distinctive tone that can be heard above the din of city traffic

trucks. There is nothing to break or get out of order, nor does it interfere with any part of the car or the running of the engine. It gives a warning tone that is distinctive and unique, and that can be heard above the din of city traffic. Its price, complete, is \$3.50.

The Locktite Tool Roll

The American Fabric Products Co., Inc., 244 W. 23rd St., New York City, manufacturer of fabric specialties, is making a tool roll quite convenient in



The New Locktite Tool Roll

design. It is so made that tools of any size can be securely locked in the roll and cannot fall out. These tool rolls are made to hold any number of tools.

Improvements in Schrader **Products**

The A. Schrader's Sons, Inc., Brooklyn, N. Y., manufacturer of Schrader Universal Pump Connections, announce improvements on three of their products,

No. 2815 Pump Connection .- The function of this connection is the same as the old style pump connection but instead of having a round knurled nut, it now has a hexagon nut, so constructed that the seat washer which makes a tight gasket seat against the cap seat of the tire valve can be replaced quickly.

No. 3037 Valve Repair Tool.-This tool was formerly known as the four-in-one tool, and performed four separate operations. It is now the five-in-one-tool, the new feature being a projection on the valve tool proper, which permits deflating the valve in a mechanical manner by screwing the projection into valve and forcing the plunger down, allowing the air to escape from the side of the projection. Another improvement on this article is the enlargement of the swivel wheel for moving valve insides. By enlarging this swivel, the operator gets more purchase in removing valve insides.

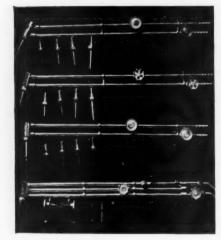
No. 2789 Universal Tire Pressure Gage for Pneumatic Truck Tires .- The function of this tire gage is similar to those of the company's regular gages, which are in general use, but it was found, after some experiments, that in

SCHRADER UNIVERSAL VALVE REPAIR TOOL



The Saylor welding torch, offered by the F. A. Saylor Co., 3202 Chestnut St., Philadelphia, is made of heavy brass pipe and all joints are threaded, right hand threads being used exclusively. The head is a bronze casting properly machined, which will withstand rough usage, hot fires, over-heating, etc.

The elimination of all unnecessary parts and the making of the essential parts as nearly fool-proof as possible make for simplicity. Double metallic flash-back protectors are used, one at the head of the torch and one in the



acetylene line at the valve, which makes these torches unusually safe. The needle valves have steel stems, and are used in both oxygen and acetylene lines. Ample hose connections are provided. The tips are interchangeable and orifices are so designed that a neutral flame is assured. Various tips are provided for all classes of work and the torches are made in various sizes and lengths, with straight or angle head. Prices range from \$15 to \$30.

The cutting torches are similar in construction to the welding torches. The heating jet and also the cutting jet are

The Shields Lubricator

The Shields Lubricator is a device designed to facilitate the proper greasing of the differential, transmission, etc. It holds about 41/2 lb. of grease to a charge. The grease can be forced from this lubricator by turning the handle. The



The Shields Lubricator

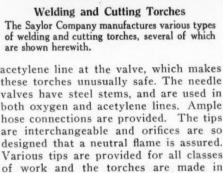
screw is of the square type, with five threads to the inch. This device enables the operator to measure accurately, as much or as little grease as may be desired. Also provision is made that the plunger can be quickly drawn from the lubricator when empty. It is finished in black enamel with plated ends.

The Kokomo Ratchet Wrench

Simplicity of construction is a feature of the ratchet wrenches made by the Kokomo Wrench Co., of Kokomo, Ind. The entire elimination of cams, eccentrics and springs make this wrench an exceedingly strong, rugged tool, with no weak parts to get out of order.

The ratchet action of the wrench is secured by means of an elliptic opening in the handle, in which the ratchet gear is held securely, but with sufficient amount of tolerance to permit of its release from the engagement with the catch or "dog" on the reverse movement of the handle.

To secure a reverse operation, the wrench is turned over and used as before. As an accessory to the wrench, a winding crank is furnished, which may be used when desired for speeding up work, a feature which has proven invaluable to manufacturers engaged in government production of motors, engines, airplanes, etc., where the expediting of deliveries was the prime consideration. The winding crank is used by inserting the key in the shank end of the socket while it is in position in the wrench proper; the crank can then be used at the option of the operator, independently of the ratchet action of the





Valve Repair Tool and Pump Connection Which Have Been Improved by A. Schrader's Sons,

order to gage the air in large tires, where the spokes of the wheel are so close together as to allow very little free space to get at the valve, it was necessary to make this gage with an angle foot, at an angle of 90 deg.

independently controlled, and in case of emergency could be used for welding. Interchangeable inner tips are used for wide range of cutting from light sheets to heavy castings. The price of the cutting torch is \$50.



The Kokomo Ratchet Wrench

wrench, and with which it in no manner interferes.

This wrench is attractive in appearance, having nickel-plated handles and heat-treated steel working parts. The winding crank has a copper handle and blued steel key. With this combination is furnished a complete set of S. A. E. pressed steel square and hexagon sockets and an extension bar, and the whole equipment is put up in a handsome, highly grained oak kit with brass hinges and hasp.

The set makes a most attractive sales window display and is being sold at \$8.50.

It

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A Radiator Guard for Ford Commercial Cars

A product for which there has been a long felt need makes its appearance in the radiator guard for Ford commercial cars, which is being marketed by W. R. Ewald, 49 Pilgrim Ave., Detroit.

This radiator guard is built with the idea of not only withstanding the most severe shocks and strains, but of distributing their force over a very large



Ewald Radiator Guard
Made for Ford commercial cars. It will distribute
shocks and strains over a large area of the chassis.

area of the chassis. It is built of ½ x 1-in. flat steel, both the outer frame and the bottom being of one-piece construction, and welded together, while the uprights are welded to the outer frame and the bottom and are uniformly spaced. The uprights are spaced in the center by pipe. A rod runs through the pipe, the uprights and the outer frame. After the side braces are put on the whole is tightened and the ends of the rods set up, so as to hold all members rigid. The side braces so function as to steady the guard and distribute the shock.

Mounting this radiator guard requires about 15 minutes. The nuts on the stud bolts, which are on each side of the radiator, must be removed, and the stud extension of the guard placed over the end of the radiator stud and tightened down, this acting as the original radiator nut and holding the radiator in place. Then the bottom ends are slipped over the stud extension. The nut furnished with the guard is put on and tightened down. The holes in the braces are located and the chassis drilled through; the bolts, which are furnished for this purpose, are inserted, and the nuts tightened on the underside of the chassis.

The guard comes complete with all parts ready for mounting. Finished in black enamel, packed two to a heavy carton. Price, \$7.50 each f.o.b. Detroit.

Disco Electric System Reduced

The Disco starting and lighting system for Ford cars, manufactured by the Disco Electric Mfg. Co., of Detroit, has been refined and also reduced from \$100 to \$70. The refinements have made the outfit simpler in construction and easier to install.

C. & M. Tools for Ford Rear Axle Work

The Cantrell-Miller Machine Works, 1246 Larkin St., San Francisco, Cal., is manufacturing the C. & M. oil retainers and tools for work upon the Ford rear axle. These tools are sold east of the Mississippi and the Ohio west border line by the O. P. Sells Co., 1834 Broadway, New York City.

The C. & M. Oil Retainers when properly applied, make possible the use of heavy gear case oil in the differential and prevent slippery brakes and also save the tires from being damaged by the oil. Leather is used in the manufacture of this oil retainer. Oil is retained by means of cold soldering, as performed by the application tool. This expansion of the lead fills in the pores of the iron housing and keeps the retainer from revolving with the axle. Two coil springs on the boot of the oil retainer keep a constant tension on the shaft.

The C. & M. Sleeve Extractors for removing Hyatt bearing sleeves are great time savers. It is stated that a C. & M. Sleeve Extractor will remove a sleeve in 15 seconds. With the aid of the dummy axle the two center sleeves may also be removed with ease.

The C. & M. Rear Dust Cap Puller is for removing the rear felt packing dust

caps. The operation takes but a few seconds.

The C. & M. Wheel Puller is substantial in construction, made of tool steel and acts like a die, as it rechases the hub threads. A uniform hold is obtained on the hub threads by the six slots which allow the puller to grab, when the tapered ring is operated. The C. & M. Liner Clamp is a tool used to replace the bearing sleeve without clamping the same together by means of a vise and a piece of string. This operates quickly and simply. The Waste Puller is used to pull waste or felt packing that is sometimes placed in the housing in a vain attempt to prevent the oil leak.

The C. & M. Steel Shims are for use on the axle shaft taper of Ford passenger cars and trucks to permanently rebuild worn out tapers and wheel hubs. This repair part will eliminate loose wheels and prevent the wheels from binding on the spring bracket nuts, brakes and felt washer dust caps. This often saves discarding the axle shaft or wheel hub because they have become worn.

Harrison Radiator Corp., Lockport, N. Y., announces the opening of sales, inspection and service departments in Detroit.



Upper Left to Right: Dust Cap Puller; Tool for Applying Oil Retainer; Below It: The Dummy Axle; Right: The Oil Retainer; Left Center: Wheel Puller; Below, in Center: Waste Puller; Lower Left: Liner Clamp; Lower Right: Sleeve Extractors

New Gasoline Curb Pump

A new addition to the line of the Wayne Oil Tank and Pump Co., of Fort Wayne, Ind., is the Monarch curb outfit for dispensing gasoline. This new model incorporates all the recent improvements and measures five gallons at a time. Only twelve complete revolutions of the handle are required to measure out each five gallons. Three additional forward revolutions of the handle return the plunger ready for a second discharge of equal volume. It may also be set to measure one or two gallons if desired.

The gear arrangement is such that the operation is easy, and the settings for



The Monarch Model Curb Pump Just Introduced by the Wayne Oil Tank & Pump Company

one-, two- or five-gallon measurements are concealed in the enclosed pump head and entirely high and dry from dirt or grease. Four separate counting devices are placed conveniently on the pump, assuring the purchaser and operator a complete record of the liquid delivered.

A telescopic cover, counterbalanced by weights, responds to the slightest touch and locks by means of a four-tumbler Yale lock at the top. Either opened or closed, this outfit is attractive in appearance and serves as an excellent advertisement. This outfit is made of heavy, malleable, bench-molded iron, solid brass and steel.

New Weaver Garage Jack and Puller Clamp for Presses

The Weaver Mfg. Co., of Springfield, Ill., well known manufacturer of garage equipment, has introduced two new products to the trade. These are the Weaver New-Way Jack and the Weaver Puller Clamp.

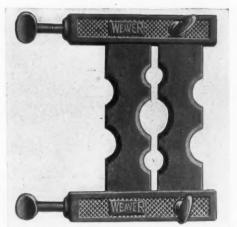
The Weaver New-Way Jack provides a handy piece of equipment for shifting cars or trucks about quickly in the garage, showrooms, service stations, etc. It is of very short construction and the handle is entirely free from supporting the weight of the load, enabling this jack to be used where there is but little room about the car. Another feature is the double ratchet mechanism which is so designed that the jack can be raised or lowered, either by the lower stroke or the upper stroke, independently of the other. The distinguishing feature of this new piece of equipment is that the wheels pivot and are guided and controlled by the handle. The lifting mechanism is of hardened steel. This new jack has a capacity of 5000 lb., and one man can easily lift this capacity load.

The length of the frame and wheels over-all is but 40 in., which enables the jack to be manipulated in cramped quarters. The maximum range of lift is 19 in., and the minimum 9 in.

The Weaver New-Way Jack is so designed that the load on the jack cannot throw the handle violently against the car. The wheels are equipped with roller bearings, and a caster under the front of the frame is equipped with a full set of ball bearings. The list price, f.o.b. Springfield is \$35.

The Weaver Puller Clamp

The Weaver Puller Clamp is for service with presses and is used to securely clamp and support all races or similar parts which can only be supported successfully by being clamped from the side. The blades of the puller are



The Puller Clamp

notched and are designed so that they may be forced into contact with the part in question; by means of the thumb screws on the side brackets. The plates of this clamp are made of high quality spring steel and are supported with heavy side brackets. They are made in two sizes. The small size with a 9-in. plate,

weighing 7 lb., sells at \$6; the large one, with 16-in. plate, weighing 30 lb., sells at \$10.

This equipment is especially useful to those doing repair work in connection with starter systems, magnetos and electric equipment.

The Crawford Service Pump

A gasoline service pump of the vacuum type is being manufactured by D. A. Crawford, Emlenton, Pa. This pump is attractive in appearance, being nicely finished and makes an excellent advertisement for the dealer.

There are two cylinders bored and reamed to uniform size, with pistons, each with three rings. The cylinders are of ample size to discharge the air in the cylinder measure and produce a tension or vacuum in excess of the column weight of gasoline between the tank and the top of the measure. All connections being made tight, the gaso-



Crawford Gasoline Service Outfit

This gasoline service outfit is of the vacuum type, the pump being an independent unit. The pump can be manually operated, or operated by electric power. It is also equipped for operating by either hand or power if desired.

line flows through the open pipes to supply the displacement of air in the glass globe. The gasoline pipe and container are one unit, having no mechanical connection with the pump. The pump is an independent unit which draws air through a ½-in. pipe, one end of which protrudes from the top of the globe, the other supplying the vacuum pump with air.

The graduations on the container do not reach the top of this pipe by several inches, therefore no gasoline comes in contact with the pump. This pump will fill in thirty seconds. The discharge fill in thirty seconds. line, made to conform to the supply openings, delivers five gallons to a car in one minute. Another feature of this pump is that when the desired gallons are pumped, an air stop breaks the vacuum instantly and if more is pumped than is required, a by-pass attached returns the surplus to the underground tank. A sump or water separator, located in the base of the measure, catches any water from the gasoline. This water can be drawn off through a door at the base of the pump. The measure is attached by three bolts through a flange

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The New Russel Internal-Gear Axle for Heavy-Duty Trucks

THE Russel Motor Axle Company, of Detroit, announces an internal gear drive axle of new design for heavy duty trucks of 5- to 7-tons capacity, which is now going into production.

"The merits of the internal gear axle, and the engineering principles which differentiate it from all other types of motor truck axles, have already been thoroughly tested in the construction and operation of the lighter trucks," says A. W. Russel, president of the Russel Motor Axle Company. "Since the internal gear drive was introduced five years ago it has been under constant practical demonstration by thousands of trucks in the lighter field.

"The demand for these lighter axles, however, absorbed the production of the manufacturers and that is why the successful application of engineering principles involved seemed apparently to be limited. Having realized the needs of the heavy duty trucks of high standards in design, material and workmanship we have been working for some time on the extension of the internal gear principles to this field, and our new heavy duty axle is the result. It is the fruit of five years of experience concentrated on the production of internal gear axles and marks, we believe, a distinct advance in rear axle construction."

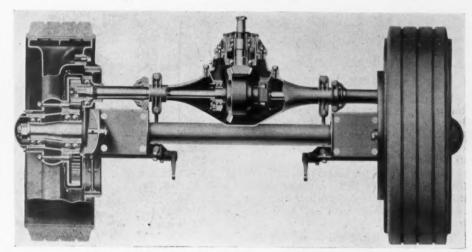
In the following paragraphs are enumerated the features of design which characterize the new Russel heavy duty gear axle. The load carrying member is a onepiece, heat-treated, alloy steel bar, with integral spindles. It is designed without abrupt changes in section so that the resiliency of this member prevents localization of stresses and fatigue of steel.

The jackshaft is placed in front of the load-carrying member, in which position the wheel bearing loads and stresses are neutralized and consequently are very much lessened. The jackshaft housing is supported on an extension to the spring seat inside the springs. It is possible with this means of support to make the jackshaft housing in a one piece casting, and thus considerably lighten the weight.

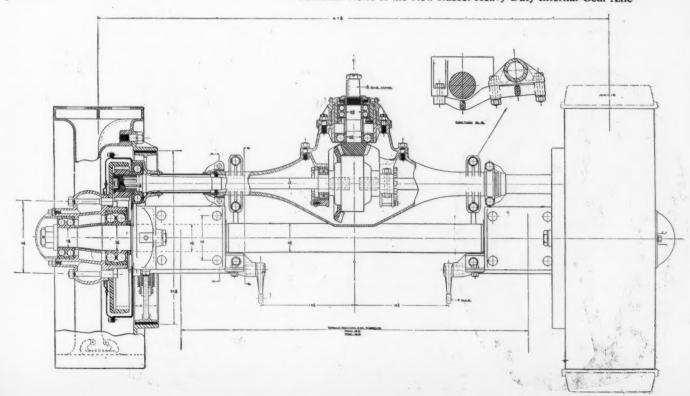
The differential, with its driving gear and the driving pinion, are supported as a unit in a differential carrier, removable from the jackshaft housing, permitting accessibility and proper alignment of gears.

The brakes are of a size which allow comparatively low unit pressures, and the brake action is obtained through leverage which insures pressure to both halves of the shoe. The leverage is so designed that it does not require frequent and accurate adjustment.

The design of the internal gear construction provides for housing the internal gear and the driving pinion, so

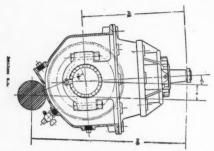


Sectional Views of the New Russel Heavy-Duty Internal-Gear Axle



that lubricant is retained and dirt and grit are absolutely excluded.

Every detail of this axle has been designed for an ample safety factor for heavy duty use. Sections of metal and



Cross Section of Russel Axle, Showing Relation of Solid Axle to Jackshaft

weights are distributed to conform to the localization of stress. Bearing sizes are on the liberal side, and material and workmanship throughout are of the highest qualities obtainable.

The New Clark Road Building Steel Wheels for Motor Trucks

Specialized wheel equipment for motor trucks engaged in road building has been announced by the Clark Equipment Company, of Buchanan, Mich., builders of Clark disc steel wheels and Clark axles for motor trucks.

These new steel wheels have a broad band surface, are built for any make drive—chain, internal gear or worm, and are interchangeable with standard motor truck wheels.

They are designed primarily for use on trucks used by road builders and contractors, and will be used extensively in the "Good Roads" building program.

A five-ton truck loaded with road building material weighs in the neigh-

borhood of ten tons. With the broad tread wheels applied a truck becomes a road roller in its operation. The constant passage of this weight assists in firmly packing the newly laid road bed, while at the same time the truck performs its regular job of hauling.

Truck manufacturers are offering the Clark Road Building Wheels as standard equipment for trucks engaged in this work, and as extra equipment for trucks which are used for several different kinds of work. When it is desired to pull trailers over heavy grades of ordinary soil holes may be drilled in the rims for the application of cleats.

Handy Oil Alarm

The Handy Mfg. Co., of Grand Rapids, Mich., is placing on the market the Handy Oil Alarm. This device blows the horn on the car, giving warning that the oil is low.

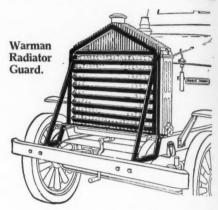


It is said to eliminate the frequent opening of petcocks on the crankcase and the worry and expense caused by burned out bearings. These alarms are packed 6 to 12 to the box and retail at \$3 each.

A New Truck Radiator Guard

The Fundamental Corp., of 489 Fifth Ave., New York City, is manufacturing the Warman Patent Radiator Guard for commercial cars. The guard is made to conform to the shape of the radiator of the truck to which it is attached. Packard and, Pierce Arrow guards are being manufactured at the present time and others are in preparation.

The guards are made of soft steel and are as heavy as the trucks will stand.



The angle-iron frame for the five- and six-ton Packards, for instance, is 2 x 2½ in., and the lateral bars are 1¾ x 1¼ in. The forward braces are 2 x ¾ in.

This guard can be attached in a few minutes without any wrench, due to the fact that this firm has designed and patented a special grip. The forward braces are also patented and prevent the guard from being shoved back on the radiator and do away with the annoying rear braces. The lateral bars are riveted to the angle iron frame at a 45 deg. angle. The price is \$17.50 for each guard.





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Parker Internal-Gear Rear Axle

By C. P. SHATTUCK

THE ranks of the exponents of the internal gear type rear axle for commercial cars is to be augmented by another company, the Parker Axle & Products Corporation, New York City, which has brought out a design that not only differs in many respects from the conventional, but presents a number of interesting details that make for unusually low cost of service and maintenance.

In designing this axle the inventor, Clark W. Parker, who has had a wide and varied engineering experience in the automobile industry, has taken into consideration a number of factors by which the value of a unit is largely determined. Among these are simplicity and accessibility of components; ease and rapidity with which the parts may be replaced, and complete enclosure, which prevents abrasive action of road dust and the necessity of frequent lubrication of the bearing surfaces.

Novel Design of Service Brakes

A feature of the Parker axle is noted in the design of the brakes, which are entirely inclosed within the housing of the live axle shafts. They are located on the differential or driving shafts, are of the multi-disk type and consist of an internally splined drum, securely retained in the housing of the driving member, and an externally splined sleeve which is in driving connection with the differential or driving shafts. These metal disks, which are not of the conventional flat type, but of a composite construction, consist of two sets, one set of which is threaded upon the splined sleeve and another into the splined drum. The construction involves the use of two flat disks separated by a radially corrugated disk, and between the metal members are disks of Raybestos. The corrugated members permit the passage of a light lubricant from the center of the brake to the outside, from where the oil flows back to the source of supply, as will be explained.

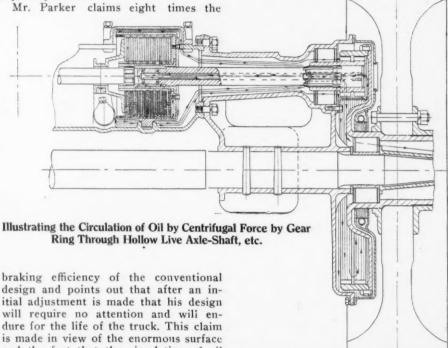
Simple and Compact Construction

Engagement of the brakes is obtained by compressing the disks in an axial direction through the action of a shifting collar fitting in a groove of a tubular extension of the innermost disk. Equally ingenious is the operating mechanism, which includes a toggle for multiplying the pull of the brake rod and an equalizing device or evener for dividing equally the pressure. The application of the turnbuckle principle to the toggle linkage makes for easy and rapid adjustment.

Of this type of brake it may be said that the principle is not new, it having been utilized with success abroad.

Three Designs Offered

While the Parker axle does not differ from the conventional internal gear types, in that the load is carried by a stationary member and the power application is by pinions meshing with internal gear rings on the wheels themselves, option of three types is afforded the truck manufacturer. One is conventional, the driving member in front of the carrying member, another, a 30 deg. design, for underslung spring suspensions, and the third locates the driving member above. The last named affords the much desired straight line drive and permits use of the flexible disk type of universal



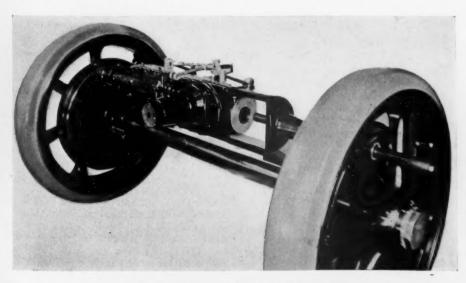
design and points out that after an initial adjustment is made that his design will require no attention and will endure for the life of the truck. This claim is made in view of the enormous surface and the fact that the circulation of oil reduces wear and heating to a minimum.

> joint, and at the same time gives greater road clearance. With 36-in. solid tires the road clearance is more than 14 in.; with 38-in. pneumatics, more than 15 in. at all points of the axle, an advantage under abnormal operating conditions.

Practically But One Reduction

In place of the conventional straight toothed internal gear, Mr. Parker utilizes a herring bone gear, noted for its silent operation and for eliminating end thrust. Instead of a two-step reduction, one at the center of the axle and a second at the internal gear sets at the driving wheels, the Parker axle employs a relatively small reduction at the differential, obtaining practically the entire reduction by the internal gears at the wheels. This makes possible the use of a small differential and axle shafts without sacrificing strength and durability, as well as makes the driving member of the axle a comparatively high speed construction.

The internal gear ring is enclosed in a two-part housing, one section of which,



The Parker Internal-Gear Type Rear Axle

Practically the entire reduction is at the internal-gear seats at the driving wheels, affording straight-line drive and high-road clearance. Note the method of removing live axle-shaft and multi-disk brakes.

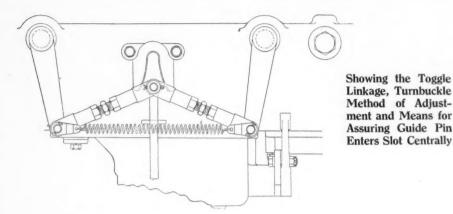
a casting, provides a support for the differential shaft. The other part is a metal pressing, flange bolted to the cast member, and which very closely conforms to the outline of the driving flange carrying the internal gear ring. One of the features of the housing is the provision made to prevent leakage of the oil. The metal pressing has a groove at its inner edge and the space is filled with a packing material so held by spring tension as to insure a perfectly tight and that sharp shoulders are avoided, eliminating the possibility on concentration of strains. The hub is designed to take either steel or wood standard wheels and is so assembled that a wheel can be demounted without disturbing the bearings or the internal gears. Option is given of a hollow spoke, cast steel demountable wheels, and interchangeable types afford the user option of single and dual pneumatics, single and dual

solid tires and plain steel rim. Produc-

displacing the cover plate the axle shafts are withdrawn. Next, the two cover plate in the internal gear housing is between two adjacent spokes. After cover plates on the front side of the housing are removed and the four bolts retaining each brake assembly. The brake assembly can then be taken out as a unit. The rapidity with which the removal was effected was due, of course, to the fact that the bolts, etc., had been loosened, but Mr. Parker claims that with these members normally tight the work can be accomplished in five minutes. One of the advantages of the design is the interchangeability of the parts. For example: The right brake assembly will operate equally as well in place of the left one, the shafts, etc., can be exchanged.

The Parker axle is to be produced in three types, namely 2-, 31/2- and 5-ton. and with the driving member located as previously explained. Its inventor claims a drive efficiency of 97 per cent., with the overhead type, and slightly less with angularity. He is perfecting a form of demountable tread that can be carried on the truck and used when traction cannot be obtained with conventional tires or where the nature of the road surface would be destructive to rubber.

The offices of the company are located at 19 West 44th Street, New York City. Clark W. Parker is president and



enduring joint with the revolving wheel hub. The driving flange, to which the internally toothed gear ring is riveted, is cast integral with the wheel hub, which is mounted on a Hyatt roller bearing at the inner end, and a Standard bearing at its outer end, caring for radial and thrust All bearings are loads respectively. ample in size.

Ingenious Lubricating System

Another interesting feature of the Parker axle is the lubrication system previously referred to. It is of the circulating type, depending upon centrifugal force. Approximately a gallon of light oil is required by this system. At a speed of approximately 5 m.p.h. the oil is carried around and up by the gear ring to a baffle plate, thence through an opening in the differential or driving shaft, which is bored out from the wheel end to the brakes. The splined section of the shaft has a number of radial holes drilled in it, and the oil is forced through these and by centrifugal action through the spaces in the composite disks of the brake assembly, as indicated by the arrows in an accompanying sketch. The lubricant collects in the housing, flowing back to the source of supply, the gear housing, a channel being provided for the return of the lubricant in the bearing hub of the differential housing.

This system not only eliminates any need of grease or oil cups, but is an advantage, as oil lubrication is more efficient, particularly in cold weather, and the renewal of the supply more easily accomplished. In average service one supply is said to be sufficient for six months, thereby eliminating the human equation to a very large extent.

Interchangeable Wheel Types

The load carrying member is a onepiece, solid, drop forged construction of heat treated alloy steel, so designed tion is planned, however, for the use of standard types.

The Parker axle embodies the Hotchkiss drive principle. The spring pads

IMMER DISCS ROTATING WITH SHAFT SEPARATING DISC Illustrating the Disks and Their Relation to One Another.

are integral with the hub of the driving gear housing which takes the torque reaction, with the result that the torque is transmitted to the rear spring directly. The unsprung weight may be said to be small, owing to the fact that the driving mechanism operates at high speeds. This should conserve tires. In addition to the brakes described, which

are service members, an emergency will be included.

Components Readily Disassembled

Reference has been made to the ease and rapidity with which the components of the axle may be disassembled. In the presence of the writer Mr. Parker removed the live axles, which are, of course, of the floating type, and the entire brake assemblies, in slightly over This is accomplished by a minute. turning the road wheels until a small

Wyman C. Parker, secretary and treasurer. Berton W. Collins, vice-president, who will have charge of sales, is well known in the industry. Lee H. Benson, formerly connected with the steel industry, will have charge of production. The chief engineer is Roger W. Hastings, long associated with the inventor of the axle. The plant is located at Shelton, Conn.

Bearings Company of America, Lancaster, Pa., has recently mailed from its Detroit office, 1012 Ford Bldg., a new issue of its load and data sheets on "Star" Ball Retainers, which are built Ball Retainers, which are built for thrust bearings, cup and cone and magneto types of bearings. These lists are made to fit in the S. A. E. data sheet folders, and all who are interested may receive copies by addressing The Bearings Company of America.

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The New Adams Axle for Trucks

By A. V. COMINGS

WORM drive motor truck axle of approximately the same weight as internal gear drive axles of similar capacity, and embodying several new and radical departures from conventional design, has just been announced by the Adams Axle Company, of Findlay, Ohio. At the same time the company announces a new motor truck front axle with several unusual features, and a tractor axle developed from its new design of worm drive truck axle.

The outstanding feature of the new motor truck rear axle is the load carrying member, which consists of an Ibeam of standard section to the ends of which are riveted the spring pads and wheel bearing supports. By means of two slight bends in this I-beam, near the center, it is carried around the worm drive housing, which it supports through flanges cast integral with the housing side plates. The other most interesting features of the new axle are in the mounting of the worm gear, and in the design of the internal expanding hub brakes.

A four inch I-beam is used in the 1and 11/2-ton sizes, of 5 lb. section for the first and 7 lb. section for the second. For the heavier sizes a five inch I-beam of 71/2 lb. section is used for the 2 ton, and a similar beam of 9.75 lb. section for the 2½-ton size. These I-beams, though of commercial section, are rolled from 40.50 carbon steel, giving them unusual strength and rigidity.

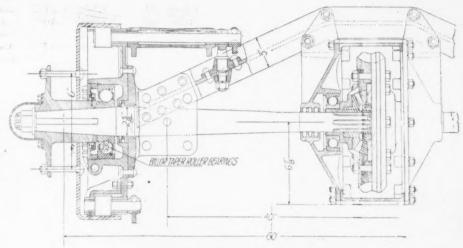
The worm drive housing, of malleable iron, is cast in three parts, the central barrel and two side plates. The central barrel mounts the worm drive on its top, the worm being supported by two radial thrust ball bearings. The back of the worm barrel is closed by a cap, while the front is closed by a castellated nut, by means of which the worm bearings are adjusted. This nut is locked by a compression bolt at the top of the barrel, and by a clip which engages in the

notches in the nut.

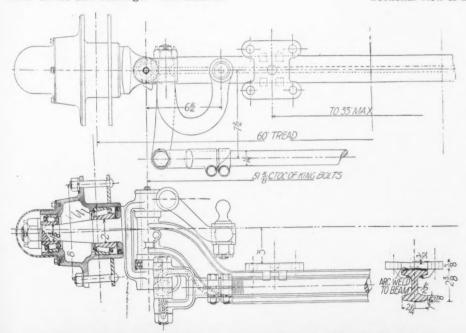
A Brown-Lipe-Chapin bevel type differential gear is used, and on this is mounted the worm wheel. The usual method of bolting is superseded in this design by an unusual plan. Teeth are cut on the inside of the worm wheel, corresponding to similar teeth on the periphery of the differential, and the worm wheel is pressed in place while hot, shrinking to a very tight fit as it cools. To make it doubly secure, it is held from slipping sidewise by flange rings, hot riveted through the worm wheel with six 3/8-in. rivets. This method of assembly distributes the driving stresses very evenly throughout the entire mechanism.

A Cleveland worm gear is used in the Adams axle, cut to a special formula developed by R. H. Rosenberg, shop manager and designer for the Adams Company. Gear ratios of 734 and 8 1-3 to 1 are present standard assemblies in these axles, though 7 to 1 will be added later. The face of the worm gear in the 1-ton axle is 2 in., and in the 11/2-ton is 23% in.

The side plates of the worm drive housing support the main shaft inner These bearings are radial bearings. thrust ball bearings, No. 213 in the 1and 11/2-ton axles, and No. 313 in the 2and 21/2-ton sizes. The main driving shafts are forged from chrome nickel steel, S. A. E. formula No. 3250, splined on the inner end and with standard taper for fitting wheel on the outer end. The 1- and 11/2-ton size shafts are 2 3-16 in.



Sectional View of the Adams Rear Axle



The Adams Front Axle Which is Unique in That the Spring Pads Are Electrically Welded to the Axle, Thus Providing for Variations in Spring Mounting

diameter, and the larger sizes carry shafts of 234 in. diameter.

Two felt oil washers and one oil groove are carried on the gear housing side plates around the drive axles.

Rigid attachment of the worm drive housing to the I-beam load supporting member is secured by means of generous flanges on the housing side plates, which extend forward over and below the I-beam. Four bolts, passing through upper and lower flange of both rear housing and I-beam, and through spacers between the I-beam flanges, hold the assembly rigidly in place. These bolts are 1/2 in, diameter in the 1- and 11/2-ton sizes, and 5% in. in the larger sizes.

The distance from the center line of the drive shaft to the center line of the I-beam, where it goes around the worm drive housing, is 75% in. in the 1- and 11/2ton models, and 91/2 in. in the larger sizes.

The axle end brackets and spring pads are of malleable iron, cast integral, and are hot riveted with five ½-in. rivets to the ends of the I-beam. They are also electrically welded to the I-beam, and

two of the four spring clip bolts also pass through the brackets and I-beam flanges, thus insuring maximum strength at this point.

The brake spider and wheel bearing housing are cast integral, and are hot riveted to the axle end brackets by a flange on the latter by eight ½-in, rivets to each casting. The housings carry ball bearings, adjustable with castellated nut, locked with split lug and clip, and with a felt oil ring on either side of the bearing.

No. 311 ball bearings, or No. 475-473 roller bearings are used on the smaller sizes, and No. 414 ball bearings in the larger sizes.

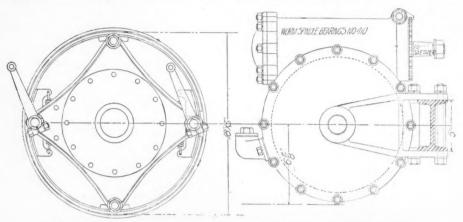
A conventional hub and wheel cap design is used.

The brake drum is pressed from standard O. H. steel, ¼ in. thick and 16 in.

the brake drum friction surface when in the release position.

Both cams are operated from levers carried on the front of the axle assembly, making for simplicity in arrangement and operation. The inner ends of the brake camshafts are supported from the I-beam in a malleable bracket riveted to the web of the I-beam, the immediate support being a forging carrying in its end an oilless bearing through which the inner shaft passes. All brake and camshafts are mounted on oilless bearings, either Boundbrook or O. & S. The brake levers are drop forged.

This forging passes through the malleable bracket and web of the I-beam, being held in place by a nut bearing against a bevel washer on the opposite side of the I-beam.



Section of Brake Arrangement and Method of Anchoring the Worm-Drive Housing to the I-Beam

inside diameter on the smaller sizes, and 5-16 in. thick and 18 in. inside diameter on the larger sizes, and is held to the wheel by the conventional method of bolting.

The design and operation of the internal expanding brake assembly is of particular interest.

Instead of following the usual practice of having two separate expanding rings for the emergency and service brakes, but one ring is used, the full width of the brake drum. This ring is split into two halves, the braking cam of the service brake operating between the ends at one of these separations, and the cam operated by the emergency lever operating between the ends at the opposite split. This makes possible an adjustment of the brakes from the driver's seat while the truck is running, as pulling up the emergency lever a notch or two will expand the worn brake bands just sufficiently to take up the wear, and when the service brake pedal is pressed, it will work instantly. The brake bands are 21/2 in. wide in the smaller sizes, and 3 in. wide in the larger.

The thrust of the expanding bands is taken at four points on the brake spider, at each cam, and at points ninety degrees from these, where the bands are held by notched supports sliding on forged pins passing through the brake spider. At all of these four points springs hold the brake bands away from

The Adams Axle Company will soon place on the market an axle similar to this for use in farm tractors. Practically the only change will be the addition of a small train of reduction gears, mounted integral with the worm drive housing, and operating between the power plant and the worm drive.

The company also furnishes the truck axle, where specifications demand it, with the worm drive housing mounted on trunnions supported by malleable brackets from the I-beam, and with proper connections provided on the gear housing for radius rods.

New Motor Truck Front Axle

The outstanding feature of the new motor truck front axle the Adams company is placing on the market is the method of providing for spring mounting.

Up to the present time spring pads have been a part of the axle forging, this method of design making necessary a complete new set of dies for axles that might be exactly alike, except that the spring pads varied an inch or less in distance from the axle center line.

The Adams company forges its axles without the spring pads, and the spring pads are forged separately, with their lower bearing surface conforming exactly to the contour of the upper edge of the axle. On the lower surface of the spring pads are forged four small lugs, which fit snugly to the edges of the axle, and when the pads are in their proper

places, equidistant from the center, these lugs are bent in around the upper flanges of the axle, and the whole pad is then electrically welded in place. The pad practically becomes a part of the axle forging by this method.

The strength of this method of fastening the spring pad to the axle was recently well demonstrated in an accident to a car fitted with this type of axle. The axle was bent near the spring pad broken short off within a foot of it, and the spring was broken squarely off, yet the spring pad was not even bent and was solid as ever after the accident.

The new front axles carry oilless bearings throughout, barring, of course, the wheel bearings. In the heavier type of axles, the oilless thrust washers are replaced by ball thrust bearings. The inverted Elliott type of knuckles are used, with generous yoke and arm dimensions

In addition to the axles described, the Adams company is placing on the market a trailer axle embodying the exclusive features of its product, and will go after this business also in the future.

R. H. Rosenberg, factory manager of the Adams company, designed the new axles the company is now placing on the market.

The company has about completed the rearrangement of its big plant at Findlay, made necessary by the change from war work to a peace basis; and is in a position to supply the trade in quantity.

Stopshock for Fords

This device, called the Stopshock, is a shock absorber of spring construction. It fastens at the rear with clamps on the differential housing and the spring valve above it—at the front, on the axle and spring above it. It is claimed that the



The Stopshock
Installed on front and rear of Ford commercial cars.
The Stopshock saves wear and tear on the engine.

Stopshock greatly increases the comfort of driving a Ford car. They are made of steel. They are easily installed, and save wear and tear on the engine as they stop vibration. They are manufactured by the K-S Supply Co., 343 Dearborn St., Chicago, Ill. Sets of two for Ford delivery cars sell at \$4.

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New Hudson Flexo Slip Drive and Frame

THE latest product to be placed on the market by the Hudson Motor Specialties Co., 1934 Arch St., Philadelphia, maker of Ford repair arms and other devices, is an extension for Ford trucks, permitting use of larger and longer bodies.

The Hudson Flexo slip drive and frame supplies the need for a longer wheelbase and more body space where light bulky loads are handled and provides a frame width of 34 in. instead of 24 in., the width of the original Ford frame. It is claimed that owing to the removal of thrust through the propeller shaft and owing to the use of two large semi-elliptic springs and two universal joints, the useful life of the entire truck is prolonged.

This new creation consists of a roll channel frame which fits around the original Ford truck frame and is rigidly attached to it at three points on each side by gusset plates and extends beyond rear of Ford frame in such a way that the rear cross member of the Ford frame forms a cross member of the new wider channel section structural steel frame.

The same axle is used but the cross spring of the Ford is removed and replaced by two husky semi-elliptic truck springs, one on each side, mounted on

special saddles. The wheelbase is thereby lengthened and a true Hotchkiss drive obtained. The Ford propeller shaft and housing are removed and replaced by a 2-in. diameter tubular shaft fitted at both the front and rear ends with universal joints, the forward end being supplied with a splined slip joint.

This construction, it will readily be seen, does away entirely with the difficulties attendant upon end thrust through propeller shaft, which thrust had formerly to be taken by the transmission or the power plant mounting. The drive is now entirely through the springs which are ten leaf, 2½ in. wide, 50 in. center to center, fitted with four clips each, shackled at the rear and provided with a rod running completely across the frame from shackle to shackle. 'The springs are solidly supported on a special bracket at their forward ends to the new outside frame members.

The springs are mounted on a special spring seat which is not only attached to the axle housing by "U" bolts but is also supported and reinforces the axle end construction by means of a heavy hexheaded cap screw connection to the original perch post hole. The springs are laterally spaced 49½ in. apart. All parts, such as the spring shackles, etc.,

special saddles. The wheelbase is there-have grease cups. With this Hotchkiss relengthened and a true Hotchkiss drive drive no radius rods are required.

The worm housing of the Ford rear axle has fitted against it a universal flange which is splined to fit the end of the worm shaft. Just forward of this is the universal joint. The rear end of the driving shaft is carried on a ball bearing and made dust tight by a felt washer. At the forward end the connection to the



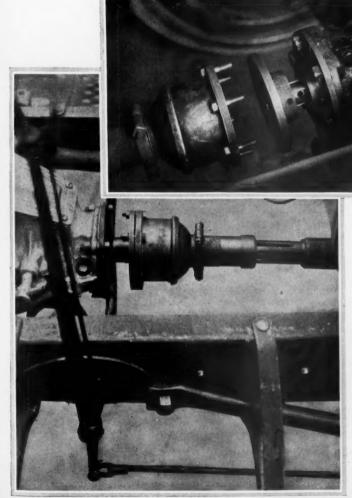
Details of Rear Spring and Mounting Note the heavy "U" bolts and special fitting fastened to the spring perch post hole; also the solid attachment of the spring at the forward end of the frame.

transmission is by means of a plate with a hub, in which is a double row ball bearing. This bearing carries a stud shaft extending to the front, this protruding end being squared to fit into the same place in the transmission as was formerly occupied by the front end of the old universal of the Ford construction. This stud shaft also extends to the rear. This end is squared and fits into the front end of the new universal joint. Both joints are suitably housed and packed in grease.

This frame extension and new propeller shaft drive gives the dealer the following take-off of Ford parts which he can use as replacements, rear springs, two "U" spring clips, two radius rods, propeller shaft and housing, front universal joint, two spring perch posts and shackles and one splined coupling sleeve.

Wheelbases and Body Lengins

The reconstructed Ford chassis may be had in three wheelbases suitable for three standard body lengths as shown in the following table:



Front and Rear Views of Flexo Drive Shaft and Universals

The splined shaft which forms the slip member is clearly shown, together with the plate which bolts against the rear of the transmission. The upper picture shows the method of connecting the universal joint to the worm axle by means of a universal flange coupling.

	Bac	ck of Rea	ar Axle	
Wheel-	Frame Extension	Space Back of Seat	Standard Body Lengths	List Price
120	34	85	88	\$250
132	34	102	112	275
144	34	114	136	300



Take-Off Parts

Parts of the Ford truck removed and which may be used for replacement work by the dealer

Rear View of the Hudson Slip-Drive and Frame on Ford Truck Chassis

This view shows clearly the springs, roll channel frame construction, the rear Ford frame member forming the cross member; also the truck rear springs and their mountings.

There is a liberal discount to jobbers which permits resale to dealers.

For those not requiring the extra frame, the slip drive is supplied for \$100. Where the Hudson Flexo slip drive only is used, special radius rods are fitted, the forward ends of which attach to the Ford frame at points on either side, opposite the center of the forward universal joint.

Extra frame lengths and wheelbases are supplied for special purposes.

The New G. B. & S. Truck and Tractor Engine

HE recently announced truck and tractor engine, manufactured by the Golden, Belknap & Swartz Co., of Detroit, and known as Model "AA," has four cylinders, 3¾ x 5. This new engine has been built to yield long service and is dependable, simple and accessible in construction. Positive lubrication and cooling, and the development of ample power at moderate speeds with the use of low grade fuel are other points which stand out prominently. Dynamometer tests show this engine to develop 27½ hp., at 950 r.p.m.; 37½, at 1250, and 42, at 1600.

The cylinders of this engine are semisteel; the upper and lower crankcase are

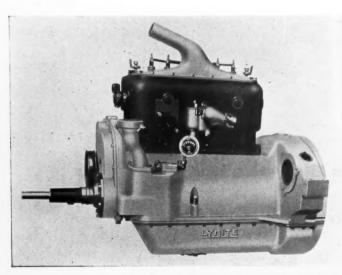
of Lynite, with machining held to exceedingly close limits. The crankshaft has three bearings—bronze backed, babbitt shell lined. The length of the crankshaft bearings are, front, 3 in.; center, $2\frac{1}{2}$ in., and rear, 3 in.; the valve port diameter is 1 11-16 in.; the valve lift 23-64 in.; the crankshaft diameter is $2\frac{1}{4}$ in.

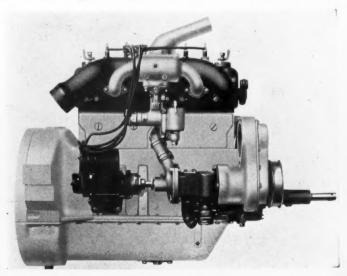
Accessibility has not been neglected in the construction of this engine. The lower half of the crankcase is detachable and can be removed without disturbing any working parts of the engine or disconnecting any pipes. The bearings can be readily reached for inspection or adjustment by this means. The removal of the plates enclosing the valves, gives

accessibility for adjustment. An inspection plug permits inspection of the Bendix drive, and the engine can be timed without the removal of any parts. The inspection plate on top of the bell-housing affords access to the timing marks.

This engine is designed for three-point suspension and all mountings and flanges are S. A. E. standard. Provision is made for attaching the carburetor to either side of the engine block, and also for the mounting of lighting and starting equipment and a governor. If a magneto is not used, the generator can be mounted where the magneto attaches. Provision is made for installing a distributor independent of the generator.

A big feature of this engine is the use of cylinder blocks with the head integral, and also the hot-spot ram's horn manifold. The use of the latter gives better acceleration and eliminates "loading." The engine can be throttled down





Right and Left Sides of the New G. B. & S. Model AA Engine, Bore 3 3-4, Stroke 5 Inches

All mountings are S. A. E. standard and the complete engine weighs 425 pounds. Upper and lower crankcase are both of Lynite, and the carburetor may be attached to either side of the engine as shown. Provision is also made for attaching a lighting and starting equipment and governor

to low speed and accelerated without the wasting of gas. This special manifold delivers gas varying not more than five degrees in temperature, which means complete vaporization and prevents fuel getting by the pistons into the crankcase and destroying the lubricating oil. The integral cylinder head feature of this engine is believed to give the greatest engine efficiency, in that there is no gasket to be damaged by inexperienced operators, or improper tightening of the cylinder head. Moreover, the use of the hot spot manifold reduces the need of a detachable cylinder head, in that the carbon does not form so

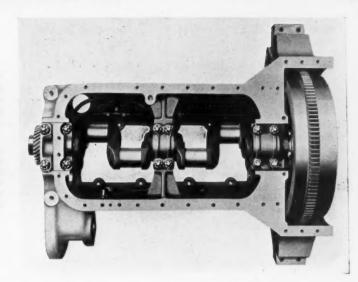
The combustion chamber in all the cylinders of this engine are exactly the same. They are machined to limits of .002 in., making the compression the same.

The use of the aluminum oil pan attaching to the upper aluminum half of the crankcase is claimed to stop all oil leaks.

The lubrication is by pressure feed with the crankshaft drilled. The breather pipe has a hinged cover with valve which releases compression from the crankcase and keeps the dirt and dust out. The oil gage is bayonet type, positive in action and shows the height of the oil level, and indicates the consistency of the oil. When the oil becomes thin and unsafe, this gage discloses the fact. When the engine is to be used in tractor service an oil cooler is supplied. The oil is forced through this cooler, which has a 72 mesh wire screen filter by which the oil is strained of all its im-

The View Underneath, Showing the Crankshaft, Flywheel and Upper Crankcase Assembled.

Oil feed pipes are shown herewith. The crankshaft is drilled and oil forced through to the bearings under fifteen pounds pressure per square inch.



purities. This filter and cooler preserves the lubricating qualities of the oil. At the bottom of the crankcase is a filter pocket into which the residuum of oil is precipitated. This can be drawn off by the removal of a plug.

The timing gears are helical cut. The pistons are 3¼ in. long, and have three rings each—the weight of the pistons complete with the wrist pin and rings, is 3 lb. 1 oz., and the weight of the connecting rod is 2 lb. 4 oz. The latter is 10¼ in. center to center. The wrist pin bearing is 1½ in. in diameter. The cooling is by either thermo-syphon or centrifugal pump. The engine dimensions over all are, width 25¾ in., height 31 in. and length 34 1-16 in.

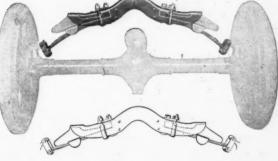
mer, a simply constructed device, takes the place of the three upper leaves on the Ford truck spring and operates in such a way as to make the truck easy riding. The price of this device is \$15.

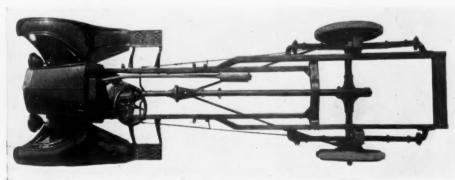
The frame and spring unit is unusually strong and consists of a 5-in. channel pressed steel frame with two heavy 52-in. truck springs mounted on the side, which practically doubles the hauling capacity frame and springs alone is \$100, but together with the drive-shaft extension, for making the wheelbase 142 in., the price is \$150. The Ford rear spring is entirely removed in attaching. The frame length is 9 ft., width 321/2 in. and the frame extends back of the rear axle, 3 ft. 1 in. The drive-shaft extension is 18 in. long. The frame as supplied without the drive-shaft extension is 8 ft. long, 321/2 in. wide and extends back of the rear axle 3 ft. 634 in.—the wheelbase is

Olson Equipment for Ford Truck.
The Olson Two-Ton Truck

The Swedish Crucible Steel Co. of Detroit, Mich., well known manufacturer of the Olson heavy duty truck unit, has announced new equipment for the Ford truck—the Olson automatic spring adjuster and the Olson frame extension with side springs and the shaft extension for allowing the placing of the rear axle near the back of the truck, when this frame extension is used. The for-

The Olson Spring Adjuster Which Replaces the Three Upper Leaves on the Ford Truck Spring, Making It Ride Easy





The Olson Frame Extension With Side Springs and Shaft Extension for Ford Trucks
This outfit is made of five-inch channel pressed steel, securely fastened to the Ford frame, and
permits the mounting of commercial bodies with loading space of twelve feet

A complete 2-ton truck at \$1095, which includes the Ford power-plant complete, together with the Olson internal gear unit, is also to be marketed soon. The wheelbase of this truck is to be 142 in. and the frame 5 in. channel, hot riveted. Steel wheels are to be used of the Ford truck. The price of this in the rear with 32 x 3½ in. dual solid tires. The springs are extra heavy, 52 in. long, 2½ in. wide with 14 leaves. The body space is 5 x 12 ft.

Woburn Tannery Co., with office and salesroom at 9 Portland St., Boston, Mass., and factory at Woburn, Mass., announces that it is now manufacturing a line of automobile accessories.

Graham Brothers Announce Trailer

Graham Brothers, of Evansville, Ind., well known manufacturers of the Graham line of truck units, has added a new product to its line in the shape of a 2ton, four wheeled trailer.

It is this company's belief that the 2ton size is adaptable to most any size truck without materially impairing its carrying capacity. The new trailer is already being produced in quantities, and it is planned to distribute them through motor car dealers and garages on a substantial discount basis

Champion Ignition to Make Speedometers

FLINT, MICH., April 23.-The Champion Ignition Co. has revived its plans for the manufacture of speedometers. These plans were abandoned during the war, but the company announces that it is now in a position to turn out about 100 speedometers per day, and by the end of the present year expects to reach a daily production of about one thousand speedometers. The company has contracted to supply the Buick Motor Car Company with speedometer equip-

Rex Machine Co., Chicago, Ill., an-

nounces that it is now manufacturing

and marketing the Rex line of automo-

tive air equipment, including the Rex

Valveless engine driven tire pump and

the Rex Valveless service station air



Arcadia One-Ton Trailer

new size trailer, for use with three-

quarter- and one-ton trucks or passenger

cars. Its carrying capacity is 2000 lb.,

with a body allowance of 400 lb.

The Arcadia Trailer Corporation, News ark, New York State, has announced a

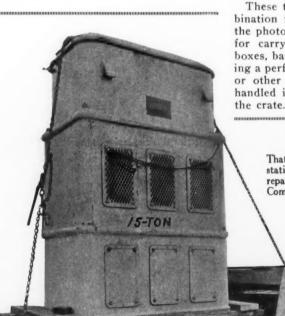
New Arcadia Trailer With Combination Farm Body

The dimensions of the frame are as follows: Length, 91/2 ft.; width, 301/2 in.,

The front axle is a drop-forged Ibeam, with knuckle steer, 134 by 21/2 in. The rear axle is a drop-forging of square section, 15/8 in. square.

The springs are 2 by 40 in.. with eyes bushed. Four rebound clips are employ-

These trailers are built with the combination farm body, which is shown in the photograph. This body can be used for carrying baled hay, fruit crates, boxes, barrels, or can be closed up, making a perfect crate for carrying live stock or other material that would be easier handled if confined within the limits of



and channel depth, 3 in.

ed on each spring. The wheelbase is 69 in., and the tread 58 in. The wheels are of artillery type, square spoked, wood, 30 x 2, mounted on roller bearings. The wheels are equipped with 2-in. Swinehart solid rubber tires. Weight of the chassis is 900 lb.

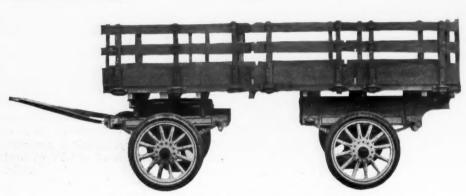
the crate.

Semi-Trailer Moves Heavy **Transformers Quickly**

That transformers may be removed from substations and quickly brought to Detroit when repairs are necessary, the Detroit-Edison Company has purchased a fifteen-ton Frue-



hauf semi-trailer. Before this was purchased, it was necessary to transport damaged transformers over the interurban lines and as a result, two or three days would elapse before delivery would be made to the Detroit repair shop. The new outfit effects a big saving in time, as a transformer can be delivered to Detroit from any of the sub-stations within a few hours.



The Graham Four-Wheel Trailer, Two-Ton Capacity

equipment.

Specifications are as follows: Hess axles, 21/4 x 13/4 in., solid drop forged carbon steel; axle collars and hub bases solid forged to the axle; Bock oversized roller bearings, dustproofed protected by felt washers and close-fitting collars; semi-elliptic steel springs, 2 in. wide, 42 in. long, strengthened by means of extra heavy hangers and fittings; Prudden heavy artillery truck type wheels, 32 x 3½ in., best grade hickory; 32 x 31/2-in. pressed-on type tires, standard make; carrying capacity, 4000 lb. dead weight; two sub-frames, fifth whee! mounted on front frame; rear frame securely anchored to body; frame material 4-in., 51/4-lb. channel, all joints hot riveted; loading space 118 in. long, 59 in. wide, side racks 22 in. high; the three side sections and end sections are removable; finish, painted in rich Graham blue, striped in black.

National Sales Co. of Louisiana, Inc., New Orleans, La., has been appointed factory sales agent for the Inner Shoe Tire Co., Grand Rapids, Mich.; Marquette Mfg. Co., St. Paul, Minn.; Sanitax Brush Co., Chicago, and the Woodworth Mfg. Co., Niagara Falls. This company also operates vulcanizing and battery departments.

Connecticut Telephone & Electric Co., Meriden, Conn., announces that it is offering to any man who left the company to enter the service the same position he held when he left, or one just as good. The company states also that men who have been in the service, whether former employees or not, will be given the preference in every instance when applying for a position with the company.

Clark Tructractor for Industrial Service

A NEW industrial tractor of interesting design has recently been placed on the market by the Clark Tructractor Company, 80 East Jackson Boulevard, Chicago, Illinois.

As the name of the machine implies, it is designed for service as either a truck or tractor. It is a three-wheel machine, with the two front wheels serving as drivers, and the single rear wheel for steering. For truck work it is equipped with solid rubber tired drivers,

The power plant is in the rear, driving forward through a transmission to the front wheels. It is equipped with a standard body of 1½ tons weight, or 1 cubic yard, volume capacity.

The standard equipment, in three styles, consists of a platform body, cargo body, and end-dump body, although the company announce they are prepared to furnish special bodies of any type or design upon special order. The price of the Tructractor, with the standard body equipment, is \$1135.

The Tructractor is especially adapted as a commercial truck, and is being used to a great extent in factory yards by contractors, builders, in and about mines, foundries, steel mills, cement works, brick yards, coal yards, and in many places for moving freight cars. It is especially designed to be used in machine shops, and because of its size, can be run very close to machine tools for loading and unloading material in the process of manufacture. It is especially adapted to being used on the charging floor

of a steel converter, or in municipal gas plant ovens. It can be run through very narrow places and will make very sharp turns. In a factory, for example, in hauling parts from one department to another the truck may be manipulated so that the dump body may be run up The replacement of rubber-tired drive wheels by steel wide-rimmed traction wheels, does not apply alone to agricultural work. In places where soft ground or mud is encountered in commercial work the steel wheels are being used. This has been especially true with con-



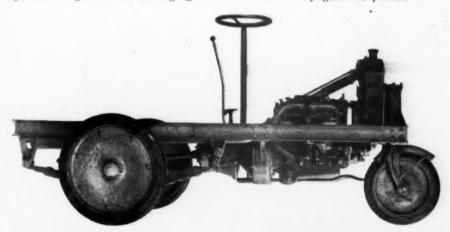
This Illustration Shows the Tructractor Equipped With Dump Body

against the bin and the load dumped directly into the bin. In its use with the concrete mixer it does away with wheelbarrow men, and is used to dump sand and cement directly into the mixer. The makers state that this is the first commercial truck for the uses named that has been driven by gasoline power.

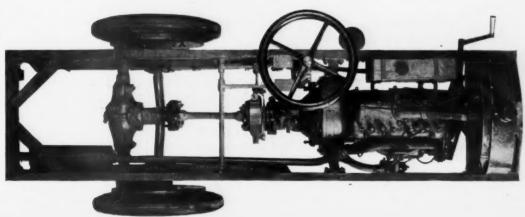
tractors, who operate the Tructractor. The value of this feature is considerable, as it takes only 15 minutes to change the wheels. The rear rubber-tired wheel is not removed for either types of work.

The Clark Tructractor weighs 2000 lb., is 42 in. wide overall, and 112 in. long. It has a capacity of 1½ tons. The wheelbase is 72 in., and tread 35½ in.

The loading space is equally distributed over the drive wheels, the engine, transmission and driver's apartment being carried ahead of the castored steering wheel. This gives good traction and allows the use of flexible springs in front under the load. The springs, of the regular truck leaf type with seven leaves, support the frame after the underslung principle, at the front end through steel spring hangers, and at the rear end of the springs through shackle joints, pinned to steel hangers, the latter at a point below and slightly in front the vertical steering column position. The rear end of the machine is



The Power Plant is in the Rear, Driving Forward Through Transmission to the Front Wheels.

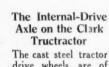


Plan View of the Clark Tructractor

also spring mounted, being carried on a coiled spring in an oil cylinder.

The frame of this machine is made of open hearth steel channel, having cross members on front and behind. Extending back from the rear ends of the side member is the drawbar member containing the ring to which various clevises may be attached for towing trailers or implements. This member, acting as a bumper as well as the upright bearing

The thermo-syphon system of cooling is employed, and the gasoline is fed to the carburetor by gravity. The welded fuel tank holds three gallons, which amount of fuel is within the fire regulations covering factories, or five gallons allowable within buildings. Officials of the company state that this machine will work 8 hours on three gallons of gaso-From the transmission the power is delivered to the drive wheels through



drive wheels are of twenty-eight inch diameter.

an internal drive axle of standard design.

The cast steel tractor drive wheels are 28 in. diam., while the cast steel truck wheels, of the drop type, are equipped with solid rubber tires, the front drive wheel tires being 28 in. x 31/2 in. One feature of the Clark Tructractor is that except for the engine cylinders there are no cast iron parts in the entire tractor

The seat is carried above the engine. and is integral with the top hood sheet. The vertical steering column and the gear shift lever are directly in front of the driver. A band brake, which acts on the main drive shaft, is operated by a foot pedal on the driver's right.

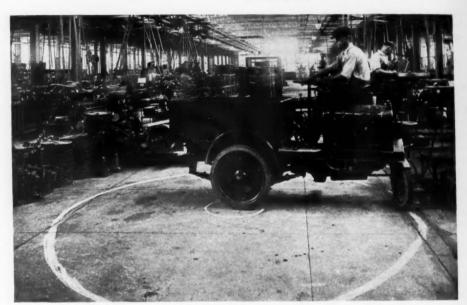
The steering gear is the worm and sector type, connection being made to the rear wheel from the ball arm by a pivotally mounted drag link. The tractor is capable of turning in a circle 12 ft. in diameter.

for the rear wheel swivel, protects the radiator, the latter being located back of the engine. The frame members and parts, such as brackets which attach to the frame, are hot riveted, making a very sturdy, rigid and compact construction.

Le Roi Model 26 Engine

The engine is a Le Roi Model 26, 31/8 x 41/2, four-cylinder, vertical type, with an S. A. E. rating of 15.6 hp. The engine is located longitudinally in the frame, with the flywheel end forward. The power is transmitted through a multiple disk clutch and a Clark selective sliding gear transmission fitted with Hyatt roller bearings, and ball thrust bearings. The power is delivered to the drive wheels through an internal drive axle of standard design.

The Tructractor has two speeds forward and one reverse, the maximum road speed being 15 m.p.h. The engine is provided with a governor, but the speed of the engine may be throttled



The Tructractor Can be Turned in a Circle of Twelve Feet Diameter

Transportation Company Offers Through and Local Service

Express service at freight rates is what is promised the people of Indiana by the newly incorporated International Transportation Company, of Indianapolis, one of the lines of which will pass through Lafayette and will begin operation in three weeks. Lines have been established leading out of Indianapolis to Chicago, to Fort Wayne to Toledo, and to Dayton, Ohio. Each of these lines will have at first several routes, the one giving the most business to the company to be finally selected as the permanent one. Between Indianapolis and Chicago there will be three routes, one by way of Lafayette and one by way of Monon and Frankfort, and the third by way of Logansport. The permanent route will be selected after the lines have been in operation long enough for the company to determine by the volume of business which is rendering the greatest service to the people and is the most profitable to the company.

The directors of the new company are Roy W. Anderson, formerly of Lafayette, and for two years the national representative of the Indiana Truck Corporation, manufacturers of Indiana motor trucks; Edward L. Smith, of Monon, and Curtis E. Traweek. The company, which has its headquarters in the Merchants' National Bank Building, in Indianapolis, is incorporated for \$500,000.

Two kinds of service will be offered by the company, through and local. The through freights will be carried in fiveton trucks, with five-ton trailers. They will make no stops, except those that are necessary between the terminal cities; and the local freight will be carried by two-ton trucks which will stop at towns and farmhouses on the way and pick up whatever freight the merchants and farmers have for transportation to other towns and individuals on the route. Both services will be rapid, and it is expected that the through service trucks will make the trip between Indianapolis and Chicago in one day. This service is as rapid as the present express service, and the rates will be the same as the regular freight rates now charged by the railroads.

In order to facilitate the business of the company along the routes, the company will have its own telephone lines with a regular despatcher, to whom the truck drivers will report from the different towns through which they pass for instruction, and to report any accidents or delays on the route.

Abbott-Downing Co., Concord, N. H., for scores of years leading coach builder of New England, has discontinued its work on horse-drawn vehicles and will devote its entire business to the manufacture of the Concord trucks. The Concord truck was first placed on the market in 1916, and this business will be developed by the company.

Protect Your Truck With-

Giant Cord Tires

Firestone

ON these massive Giant Cord Tires you can carry heavy, fragile loads, at express truck speed, with maximum protection to load and truck. For intercity passenger and fast trucking service between distant points, they make the ideal Truck Tire equipment.

There are many classes of service, each demanding tires of different types. Truck operation on pneumatic equipment presents unlimited possibilities of development.

Firestone makes a tire suited for every road, load and condition of service.

Half the Truck
Tonnage of America is Carried on
Firestone Tires

FIRESTONE TIRE & RUBBER CO.

FIRESTONE PARK AKRON, OHIO
BRANCHES AND DEALERS EVERYWHERE

Government Collection of Reconstruction Information Offered to the Business World

By CHARLES H. CHASE
Of the Reconstruction Research Division of the Council of National Defense

National Defense is now placing at the command of the business world the information contained in the voluminous collection of data brought together, classified, indexed, and partly digested by its Reconstruction Research Division. It also offers the services of this Division in the procurement of such further special information as may be desired and which may aid in the reorganization of industry and the resumption of trade, or which may in any other manner promote progress in the Reconstruction.

Just what the information here offered consists of may be indicated best by reference to some of its sources and by mention of a few subjects under which the material is sub-classified:

Official information—The Division has undertaken to chart all the Federal official bodies that have a point of contact with demobilization or reconstruction, and to possess first-hand, up-to-date information as to accomplishments and plans of each such body or bureau. Furthermore, through its "field service," branching out into 184,000 state, county and community organizations, including some 16,000 women's units, the Division is enabled to maintain direct contact with every sort of state and local reconstruction activity in the land. A digest is kept of state reconstruction news.

Foreign reconstruction—The Division has access to every important report of foreign reconstruction activity proposed or accomplished, that reaches this country. It also has access to the best information there is on foreign, commercial, industrial and financial conditions and prospects. A digest is kept of foreign reconstruction news.

Domestic business background-The Division has official contact with all the war administration boards, bureaus and investigation commissions, as well as with the Federal Departments them-Thus it has access to a great deal of statistical and other unpublished information, ranging all the way from domestic price data and production estimates, wage data, labor supply reports, and the reported results of experiments in methods of handling labor problems, to notes on foreign production, the foreign labor and emigration situation, foreign market conditions and finance. The Division has advices as to which industries and which sections of our country are picking up and making their reconstruction readjustments the more promisingly. Of course such a range of information, covering physical resources and available goods, the money and credit outlook, relative prices and price tenden-

cies, foreign prospects and the trend of actual business development as represented by reports of current projects and undertakings throughout the United States—such a survey must tend to yield more reliable impressions as to what the future may be expected to bring than can be derived from the more restricted basis of judgment of the average business group.

Public opinion and general information—The Division has its own clipping bureau, supplemented by the service of the chief commercial clipping bureaus. Thus it is enabled to sift practically everything in public print that has a bearing upon any phase of reconstruction. All this material is classified, indexed and made ready for reference. The industrial or financial organization or trade paper that chooses to tap this resource will no doubt find unexpected stores of information.

In thus proposing to extend its services, the Council opens to the business public probably the largest and most complete assembly of up-to-the-minute reconstruction information that is in existence. Through the fact that the Council of National Defense itself consists of six secretaries of administra-

tive departments of the Government, and by virtue of the further fact that for more than two years the Council has been engaged in the closest co-operation with national, state and local agencies of private, as well as public bodies, the Reconstruction Research Division has been from its inception possessed of invaluable contacts in all directions.

The material and staff now placed at the service of business was originally intended primarily for governmental use. and they will, of course, continue to function as the governmental clearing house of reconstruction information. The beginning of the Council's researches into reconstruction and readjustment matters in this and foreign countries followed upon a memorandum addressed to the six cabinet members forming the Council, by Grosvenor B. Clarkson, its Director, on May 6, 1918. The President of the United States received a copy of this memorandum and shortly afterwards authorized the Council to begin its studies.

Director Clarkson immediately began the organization of a staff of experts, including O. M. W. Sprague, professor of finance and banking, at Harvard, and Herbert N. Shenton, of Columbia. Out of this staff work grew the Reconstruction Research Division, which was organized on February 3, 1919, with Mr. Shenton as its chief.

Inquiries may be made by written communication, by telephone, or by personal representative. Requests should be addressed to the Reconstruction Research Division, Council of National Defense, 18th and D Streets, N. W., Washington, D. C.; telephone, Main 5780.



A Truck and Trailer Outfit That Works Seven Days in the Week

This four-ton capacity trailer is operated by the National Ice Cream Company, of San Francisco. It is used in connection with a Packard three and a half ton truck and hauls ice cream from San Francisco down the San Mateo Valley as far as Palo Alto, which is located near the head of the Bay; then journeying on through Mayfield, the trailer and truck deliver ice cream to all the small towns on the eastern side of the Bay, returning by way of Oakland. This is a sixty-mile trip, and the truck and trailer make it with a capacity load every day in the week, not excluding Sunday. The trailer body is unique in design, having six different compartments, three opening out on each side. These compartments hold large freezers of ice cream. There are also compartments accessible from the top of the body which carry ice and salt to keep the cream in shape while in transit. By using the trailer, the National Ice Cream Company has been able to cover the same territory with one truck and trailer, and with one operator, as was previously covered by two trucks and two operators, and it can be easily seen what an enormous saving has been made by adding the trailer equipment. This trailer is equipped with brakes, which are operated by the driver by means of two jerk lines, one to set the brakes and the other to release them.

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HE steering gear is the only part of a motor truck constantly in use in which human Strength is concerned.

No matter how perfect mechanically the truck may be in every other respect, if the steering gear is hard to operate, neither driver nor truck can do justice to the work they have to do. On the other hand, a steering gear that is easy to operate conserves the driver's strength and increases the efficiency of both driver and

The man who drives a Rosssteered truck knows by experience that the enormous bearing surfaces in Ross Steering Gears, together with Ross quality in materials and workmanship, guarantee easy operation, as well as safety and reliability.

Ross Steering Gears mean an easier day's work for the driver, and at the same time a bigger return to his employer in greater service from both the man and the truck he

As a result, Ross Steering entire United States.

Gears are now used as standard equipment by 115 different manufacturers, representing considerably over half the motor truck industry of the

Write for catalog and any special information desired. Ross Gear & Tool Co. 760 Heath Street Lafayette, Indiana

The Steering Gears that Predominate on Motor Trucks

Mr. Farmer is in Great Need of Your Motor Truck

By WILLIAM DARWIN FELLOWS

R. FARMER often hears from his commission man in the city that his last load of perishables arrived in bad shape, and must stand a reduction from returns. The speed of the motor truck will do away with this delay and spoilage. Also freedom from breakages and theft will be less.

I don't believe a farmer ever shipped his stuff by railroad, but that he felt it would have to be handled by many men, and possibly go wrong en route. Railroads employ quite a number of men, and some are very careless. In these after-war days the railroads cannot take proper care of the transportation turned in to them. The situation is worse than it ever was as relates to safety, promptness and so forth.

Sell Mr. Farmer a good truck and let him act as his own railroad. Like other good things he has had to do with in the past, he will commence to like it, and then you can't take it away from him. The farmer is slow, of course, to entertain anything brand new. Still he has entertained things brand new before and will do it over again.

The Kind of Body He Wants

A dealer told me the other day that in regards to body designs, he sells six stake bodies to one of the other sort. Thinks me, he didn't figure so acutely on the farmer trade. He sells trucks mostly to city concerns. He can't seem to get the notion out of his craw that everybody wants a stake body. There are some other things of which the dealers will have to disabuse themselves before we can hope to get the farmer trade. However, if we sell a farmer a good stake body he can put on his side boards any time.

Educating the Farmer to the Truck

The citizens of the state of Michigan voted for better roads recently. They proclaimed themselves heartily in favor of truck transportation. The greatest number of these citizens didn't own automobiles or trucks. They believe, though, that good roads will lower the cost of living. Even if the railroad should build a ten-track road between two cities, it would be futile in solving the transportation problem between towns through which the railroad did not operate. Motor truck transportation, then, is the one logical solution of the problem

Last fall, apples rotted under the trees. Highway transports were too busy hauling war freight to pay attention. Supposing the farmer had owned his own truck, what then? This not only applies to apples, but to every other farm product.

If the manufacturer can effect a saving of from 20 per cent. to 25 per cent. by the truck system of transportation, where does the farmer get off? He will

own his own truck; he will have no overhead to account for; he will have no long string of expensive operators to pay off every Saturday; he will have no great dividends to earn for his stockholders. He must show a profit for himself only. Can he do it? Yes.

The farmer is the keenest individual I know of to wish to make greater profit. He is never satisfied. Is he, then, a fertile fellow to work on? Never mind the answer. The great trouble is to get the farmer started. Get a truck on to his next neighbor's farm then. Watch him perk to it. He may not perk, this year; he will next season. He and that owner will have it out between them. Then the scales will commence to fall from his blinks. He must be educated to the truck, of course. This is one of the finest ways in the world to do it, that is, to let his neighbor do it. But before that happens we will have to educate his neighbor to the truck.

There is a dealer in my home town who owns an old truck for his own use. He has loaned it many times to his farmer neighbors. I've known him to loan it to a farmer for several days at a time. It has resulted in seven sales of trucks by the dealer, so far, and that was his object in loaning it. He gave them a bite of the meal and they weren't satisfied until they ate it, from soup to nuts.

The dealer said to me, last summer, that one of his farmers came to the store after he had used the truck a few days and said, "Why, man, that there thing saved me a whole lot."

Today, that farmer has a truck of his own. Nowadays, in place of putting his stuffs into a box car to get there any

old time and in any old shape, he loads them into his motor truck, carts them to the city and sells them fresh and gets better prices.

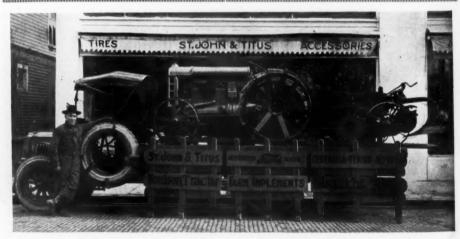
Others saw what he was doing and weren't content till they, too, had a truck. Our country is in a bad way, true, relative to transportation facilities. Probably the situation is blacker than ever it was before. So far as the railroads go, it is. The day of the motor truck is breaking wide open and sunny. The eastern sun shines as it never shone before. Get after this new trade. It's there to be had and the farmer has the money.

To Study Traffic Conditions

Traffic has attained such proportions in Newark, N. J., that the present regulations are proving inadequate. At a meeting held recently, and at which practically every civic organization, including the Motor Truck Club of New Jersey and county engineers were present, a temporary organization was effected and Major Frederick A. Reimer, county engineer of Essex county, was appointed temporary chairman, and Alfred Way, Jr., of the Motor Truck Club of New Jersey, secretary. At a later meeting these were elected permanent officials.

A committee of five has been appointed to make a comprehensive study of traffic conditions in the various cities, and it is understood that the best features of these will be incorporated insofar as they are applicable to conditions in New Jersey.

Metal Products Sales Co., 979 Woodward Ave., Detroit, will act as direct factory representative for the Globe Machine & Stamping Co., Cleveland; Standard Foundry Co., Buffalo; Springfield Malleable Iron Co., Springfield, Ohio; Enterprising Mfg. Co., Akron; Maynard Electric Steel Casting Co., Milwaukee; Barnett Drop Forge Co., E. Hampton, Mass



Use Truck for Transporting Tractors and Farm Implements, Also Demonstrators

St. John and Titus, Fordson agents for the territory of Centralia, Tenino, and Olympia, Washington, utilize a two-ton Packard truck for transporting tractors and farm implements out to the farms, also for transporting demonstrators to various points in these counties. Occasionally this company has to deliver a tractor fifty miles. As the truck is equipped with pneumatics and can travel from twenty to twenty-five miles an hour, the tractor can be delivered to the owner and the owner taught to operate it and the salesman can get back the same day. The company also finds the truck very useful in transporting supplies from the Centralia warehouse to the Tenino and Olympia garages. Occasionally oil and Ford parts in carload lots are distributed by the use of this truck

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SIVYER S CASTINGS

The Sivyer Service of providing Electric Steel Castings has for its objects the decrease of machining costs and the increase of wearing-quality and life. Both are attained by methods which result from long experience and begin with the design of the casting itself. When we find that a casting we are asked to furnish is of a design not consistent with good foundry practice, we study its function in the completed unit and offer the necessary suggestions to make it a really practicable casting job without affecting in any way its function and efficiency.

Secondly, Sivyer Service analyzes the functions of the casting and specifies the proper composition steel for the job; long experience with carbon and alloy steels has enabled usto reduce costs and increase quality remarkably for many different industries.

Thirdly, Sivyer Service makes a careful study of the pattern and molding problems involved, for improper gating and insufficient risers are often the greatest wasters of machining labor and metal.

Fourthly, Sivyer Service analyzes carefully the proper annealing methods to be used and controls their proper application through unfailingly efficient equipment and men. In short, the Sivyer Service supervises every step necessary to secure unusually and unfailingly good castings of elec-tric steel. It never relies on one factor alone, relies very little even on the natural freedom of electric steel from occluded gases and on its commonly recognized merit in resisting crystallization. It also depends but little on the inherent scientific accuracy of the electric furnace process. From castingdesign to sand-blasting and tumbling, the fundamental superiority of Sivyer Steel is due to its men and metal. Their value is best proved by the fact that, although the production of steel castings is generally looked upon as a local one, the Sivyer market is national.



THE punctilious care exercised at every stage in the production of Sivyer Castings goes even to the minor phases of pouring. The opening of each mold is kept carefully covered to the last minute. It is the final precaution in preventing sand-spots in the castings, which so often raise materially the costs of machining. The painstaking thoroughness here exemplified is one of the many factors which have won for Sivyer Castings their national market

SIVYER STEEL CASTING COMPANY, MILWAUKEE

Trucks Successful in Jersey Peach Orchards

HAT the use of trucks can be shown to be profitable for short hauls, and when used only a short season each year, is illustrated in the case of peach growers in Southern New Jersey.

In and around Hammonton, N. J., there are large acreages devoted to the raising of peaches. Practically all of the crop is shipped to the New York market. During the season a special fast freight service is provided by the railroads so that peaches can be loaded into cars up to 5 P. M. and reach the New York market very early the next morning.

As the growers aim for quality first, the fruit is very carefully handled and packed, and is shipped in "carriers," or boxes.

For carting the peaches from the orchard to the packing houses a one-horse wagon with the body mounted on spiral springs is often used. But light weight trucks equipped with small express bodies are becoming more and more popular for this work.

For hauling from the packing houses to the freight station, trucks of 3/4-, 1-, 11/2- and 2-ton capacity are used. The haul is a short one, averaging only two

or three miles. But trucks are considered a necessity for this work. The shipping season is truly a rush season, and to take care of all the work with horses requires keeping several teams all the year round. By the use of tractors and trucks the larger growers are able to do the work with only one team.

Trucks handle the shipments to the station much quicker than horses and the saving in labor is an important item, as it is difficult to get enough labor for all of the work of picking and packing in a section devoted so extensively to the same crop.

An incidental advantage of the use of trucks is that one more trip can be made at the end of the day than is possible with horses. This allows the grower to keep packing until later in the day, and still have the peaches at the station before closing time. Peaches ripen very quickly, and often they cannot be held even for a day without the possibility of spoiling, or at least being unfit to be graded as very best quality.

Pneumatic tires are popular on trucks and are becoming more so as their advantages for this work are found out. They allow the trucks to be run at higher speeds without damage to the fruit, and furnish much better traction when the trucks are used in soft ground. The soil in this section is sandy and consequently gives very poor traction to a loaded truck.

There are several growers who ship one to two car loads of peaches every day during the heavy shipping season. Naturally, they are particularly interested in the reliability of trucks they use. Compared with the total value of crop the cost of operation is comparatively a small item. Dealer service on trucks is a pre-requisite to sales. In case of trouble a service man is required not "after while," but "now."

On the large orchards trucks are sometimes used to haul water in barrels for spray outfits. The larger spray machines are pulled by tractors, and some little time can be saved by taking the water to the more distant parts of the orchard and not running the tractor and sprayer to the barn. Spraying must be done just at the right time, and in case of bad weather there may be hardly time enough to complete the work. Everything possible must be done to save time.

Diamond T's Worked for the Gobs

Anyone who has passed through the Great Lakes Naval Training Station north of Chicago in a railroad train realizes that in an immense reservation such as that, efficient transportation is a matter of the utmost importance. Moving both men and materials was accomplished during the war period by means of a large fleet of motor trucks, these vehicles giving the same wonderful service there that they gave in other localities during the war. A fleet of thirty Diamond T motor trucks were in use throughout the war period, carrying ma-



A Fleet of Thirty Trucks Carried Coal, Ashes and Supplies Needed at the Reservation

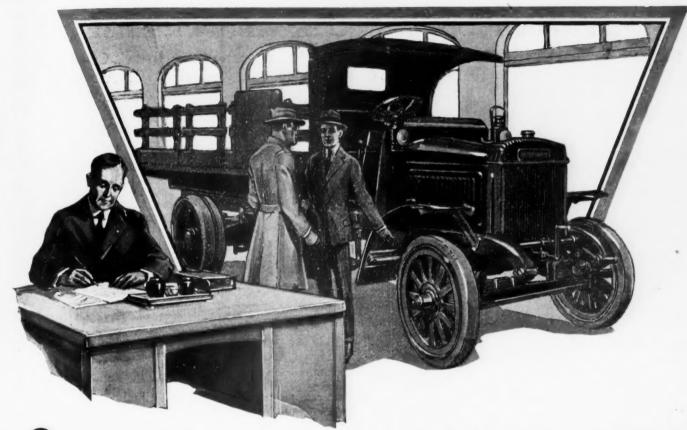


One of the Diamond T's Equipped With Bus Body for Carrying Passengers

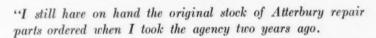
terial, coal, ashes, timber and all manner of supplies, and some were used in transporting the men around the reservation on various work. Four of the chassis were fitted with 'bus bodies for this work.

Some of the trucks were used for handling air planes, and at the time of the Chicago Motor Truck Show part of the Diamond T fleet was called into requisition to haul the aeroplane exhibit to the Armory, where it was shown, trailers being used in connection with this work so that the entire exhibit was hauled at one time.

General Tire & Rubber Co., Akron, Ohio, announces that its Major blow-out patch is now delivered to jobbers marked with the trade name "Major." This company has been manufacturing this accessory for the past five years.



How many truck dealers could write a letter like this?



"Haven't had a single call for a repair part, in spite of the fact that I have dozens of Atterburys running on the streets.

"I call that some record."

The Atterbury dealer who wrote the above (name on request) merely proves that there is a high net profit in hand-

ling a really high-grade truck.

If you are interested in **net** profits—write us for information about the Atterbury Dealership.

ATTERBURY MOTOR CAR COMPANY, BUFFALO, N. Y.





Systematization Spells Success for Trucking Firm

Personal Supervision Over All Details of the Business, Enlistment of the Driver's Co-operation in Obtaining Orders for Shipments and Careful Attention to Operating Costs Are Some of the Methods by Which the Phillips' Specials Daily Motor Service Has Built up a Successful Trucking Business

By K. HERRICK

ERE are the things which have brought success, in less than a year, to Frederick Phillips, engaged in long distance hauling, under the name of Phillips' Specials Daily Motor Service, of Philadelphia and New York:

(a) Close personal attention to "the rules of the business."

(b) Keeping in touch with useful sources of information regarding impending freight shipments.

(c) Unrelaxing vigilance over all details of the work.

(d) Personality.

Wherever the Phillips Specials, the conspicuously clean, champagne-colored, patent-top vans with their blue and gold lettering appear, one may be sure that profitable business transactions are under way. The fleet of trucks consists of ten 5-ton Pierce-Arrow trucks—five of the van type and five stake body type.

Before entering the hauling business, Mr. Phillips was an importer of Guernsey cattle, and early began to learn about different modes of transportation. He became used to being on the ground himself in making deals, and went to the Isle of Guernsey to do his own buying.

Personal supervision is carried by Mr. Phillips to the extent of his being on a truck every time a New York trip is made, which means daily. Usually from three to four trucks go together. The operators, most of whom were soldiers, are pleased with this arrangement and each takes a personal pride in doing his work in an expert way, at a time, too, when great difficulty is being had generally with drivers. All his men are Philadelphians.

Phillips Specials service has its main office on the fifth floor of the Philadelphia National Bank building, a stone's throw from the city's most important wholesale district. The building at 421 Chestnut street, is not far from the Camden ferry, and quickly accessible from surface and subway cars. Occupying a strategical position, too, is the concern's new garage and repair station, at 1718 Wood Street, a thoroughfare but three blocks from the important artery North Broad Street, the heart of the motor car section. Wood Street itself is little traveled, and there is no congestion. thus allowing unimpeded ingress and egress to and from the garage, which is on a site 85 by 45 ft., with a 15 ft. space to ceiling. The interior has no posts.

The Phillips New York receiving and delivering station is a roomy building, two stories high, at 366-368 West Broadway, corner of Watts Street. It is in the center of the wholesale and manufac-

turing district and, as Mr. Phillips says, "Can be reached by everything but airplanes."

Associated with Mr. Phillips in the management of the Philadelphia office is C. B. Clair, formerly in charge of embargoes for the Clyde Steamship Company. In New York, John McGreevy attends to the office details and the obtaining of return-loads.

How Phillips Puts It Over

He keeps informed on impending freight movements.

He makes a practice of watching the markets.

His operators solicit custom on each delivery.

He arranges to transport raw materials and bring them back again as finished products, thereby getting trade "going and coming."

He keeps in close contact with export brokers.

He uses expert soldier-drivers and lets them eat all they want and run an expense bill.

He has three shifts for his drivers on each truck.

He has advantageous methods of buying oil and gasoline and eliminates any possibility of a second theft in the case of fuel.

He buys his cars outright, written off so much per month and making each car pay for itself in a year.

Every truck is drained of oil nightly, then freshly lubricated and the used oil reclaimed.

The governor on each car is sealed after being set.

Every night he accompanies a unit of his fleet on the road.

The firm has a large trade in hauling to foreign ship-sides. Recently 30,000 lb. of merchandise for export to Switzerland was moved on three trucks. Huge cargoes of skins and leather for export often are taken to Stapleton, and frequently such loads as liquorice mass are shipped. A big business also is done in inbound merchandise from steamships. Department store merchandise, combination loads, steel products, mechanical stokers and machine parts are all in the day's business. Work for public service corporations in New Jersey is on the schedule, and frequently fine skins are carried to Brooklyn, and finished articles taken back to Philadelphia. The object is, if possible, to get the goods "going and coming," and if it is managed right, this usually can be accomplished.

An important point is to have each driver either solicit orders outright whenever making deliveries, or make inquiries which may lead to future orders for transportation. Another is to make a business, through a variety of sources, of knowing accurately when and in what direction freight of different kinds is to be moved. Keeping in touch with export brokers is still another method.

Adherence to these principles has brought in much trade for the Phillips Specials.

While the daily service is from Philadelphia to New York and return, trips are made on order to Newark, Boston, Northern New Jersey and to New England. The transferring of products from the factory to the customer's place of business, without drayage cost at either

end, is a specialty.

For the New York service, the trucks leave the garage at Philadelphia at 7 P. M. The governors are set for the speed desired and stay locked in transit, as they are sealed before the start. Except in emergency there is only one man to the car. In the case of the vans, he is protected by a storm-proof Pullman cab with a patent door-fastening. Mr. Phillips aided greatly in designing the non-leakable top, which is produced by a Philadelphia concern. There is one lieutenant among the Phillips drivers recruited from soldier-experts, and he spends part of his time working on the engines, at which job he is very adept.

The drivers work in three shifts. The day man in Philadelphia meets the incoming truck at the garage and receiving station, and unloads, or delivers, the incoming load, while the man just off the road from New York goes home to sleep. After delivery of the incoming load and pick-ups for the load to go to New York on the next trip, the day man prepares to go home as soon as he has gone over the engine to see that all is right. By that time the night driver who is to take the new load to New York has shown up. The day man then goes home and the night man drives the car to New York and goes to bed. The New York day man unloads, or delivers, goes over the engine again and then drives the car to Philadelphia, the shifts being repeated indefinitely.

"I encourage the drivers to eat all they want, without stint," says Mr. Phillips. "Driving promotes appetite, and it is good policy to let the boys have what they wish to eat. The drivers have a fund and an expense account. The average pay for each of the ten drivers is \$35 a week, and they are allowed \$25 a week expenses for the round trip. We now have some men from Camp Meade,

Responsible truck makers have adopted Clark Equipment as standard for their trucks.

Clark Axles and Wheels mean satisfaction to truck maker, truck dealer and truck owner.

Clark Equipment is found only on good motor trucks

CLARK EQUIPMENT COMPANY BUCHANAN — MICHIGAN

Informative literature mailed upon request



and every one is an expert driver and has a knowledge of motor mechanics. I believe in going on one car myself every night, and the drivers never know which one it is going to be till I climb aboard. That the boys drive pretty well is shown by the fact that none of our cars has been delayed for any time on the road and not one of them thus far has been repaired outside of the Pierce-Arrow shops. Often five of our cars leave each terminal; the one here and the one in New York simultaneously."

Provision Against Accidents

Skould any accident happen on the road, it would find the Phillips Specials well prepared. Each car on a long distance run carries a block-and-fall, 250 ft. of one-inch rope, two towing chains capable of sustaining a pull of 20 tons, and a complete set of tools and jacks. Each van has an effective electric lighting system.

In the matter of lubrication and gasoline, Mr. Phillips has unusual facilities. First of all, through Mr. Clair, who is conversant with the oil business, the concern keeps in close touch with the market. Economies are practiced through various novel methods. For instance, every incoming car is thoroughly drained of lubricating oil, which is saved and re-strained. This permits each car to run every trip with clear oil. The draining is done while the driver is looking over the engine, or caring for other parts of the machine, so that no time is lost in the operation. In each car the screens are cleaned with a gallon of kerosene, which has proved to be an advantage and an economy in the long run.

Grease under the present plan goes in with general garage expenses.

As for gasoline, this concern has another fortunate arrangement. In Metuchen, N. J., along the route of the fleet, lives a farmer who sells gasoline on the side, and disposes of such a quantity of it that he has found it profitable at a selling price of only 25 cents. Every night when the cars leave the Phillips garage they are fed enough to carry them to Metuchen. Here they park at the farmer's while he fills them up to the top for the remainder of the run to New York. The driver signs the double

slip—for the outgoing trip, this time—which indicates the date, truck number and quantity of gas sold. On the return trip a similar stop is made and the bottom section of the double slip likewise is signed. It is returned by the driver to the office, signed for two "fills"

A practice is made of watching market conditions, not only with regard to merchandise to be transported, but also as bearing on supplies to be used by the firm.

One good point of this method of buying gasoline is, that should there ever be a dishonest driver, he could not "get away" with more than one gasoline theft, as exceedingly close "tab" is kept on drivers and sales by this farmer, in case of just such an emergency. He never fails to note who takes the gasoline and the number of the truck for which it is intended. The elimination of the possibility of continued theft of gasoline on the part of drivers just now is important in Philadelphia, where the ruin of more than one inter-city trucking concern within the last twelve months has been attributed to just such robberies on the part of unscrupulous operators, coupled with the systematic theft of tires.

Full Loads the Most Profitable

The firm makes a point of going after "straight," or full loads. The usual charge is \$1 a 100 lb., and 20 cents a cu. ft. on especially bulky parcels, although there may be a higher tariff, according to the nature of the goods to be carried. It is roughly estimated that it costs the concern about \$85 to make a Philadelphia-New York return trip.

Garage expense, office expenditures at both terminals and wages of employees are divided into so many trips a week. As a basis there are usually twelve trips a week for six cars. It is estimated that overhead per day, for each car, is close to \$20.

"I bought my trucks outright," said Mr. Phillips, in speaking of operating costs. "I arranged so that each truck pays for itself, too, in a year."

Mr. Phillips charges himself with the value of the car and writes off a certain amount each month on each car, which, in its entirety, costs \$7000. The chassis alone costs \$5500. The body and electric lighting system add about \$1000. Each car is guaranteed to run 250,000

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Shipping Receipt of the Phillips Specials Quadruplicate Form System It is signed by either the receiving clerk or the chauffeur. (Original $8\frac{3}{8}$ x $15\frac{3}{8}$ inches)

Nº 100	PHILLIPS SPECIAL MOTOR TRANSPORTATION											
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Phillips Specials Manifest Sheet

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To make delivery quick and sure the Post Office Department is advocating the general use of motor trucks on rural mail routes.



UNINTERRUPTED MOTOR SERVICE speeds up action in business and has also an important and direct relation to individual and community interest.

FISK CORD TRUCK TIRES quicken service and economize cost when a truck is needed for long hauls and quick runs.

THEY REDUCE BILLS for repairs and fuel—protect mechanical parts from road shock and make for much greater speed. These are items which turn loss to profit.

A HEAVILY LOADED TRUCK on a slippery highway, without real traction tires, is a menace to the public, to itself and to its cargo. More than any other vehicle it should be shod for safety. The Fisk Cord Pneumatic is one of the few tires which meet the safety requirements.

FISK TRUCK TIRES

miles. The first thing a fleet unit has to do, then, is to earn its \$575 a month, the amount Mr. Phillips elects to write off on each car. If it earns its \$20 a day, it pays for itself.

From 50 to 55 gal. of lubricating oil are used on a run, at 38 cents a gallon. For the round trip about 40 gal. of gasoline at 25 cents a gallon is used.

Repairs for the first year of business have been very slight-about \$300 up to the present time. A few bushings, grease cups and other small parts have been renewed, and that is about all.

The fleet units are insured for their full value against fire, theft and damage by collision, or upset, and \$5000 additional insurance is taken out on each cargo. Full coverage is arranged for. The additional insurance, on the marine plan, is put on each night when the manifest sheet is made out, this being a considerable advantage, despite its

With regard to office forms employed, the original of the manifest, which is in duplicate—a yellow and a white copy, the former being for the office, goes forward to New York, for instance, with the driver, accompanying the freight bill. Each manifest is numbered, and contains spaces to be filled in, for the chauffeur's name, his helper, if he has one; the truck's number, point of shipment, destination, names of shipper and consignee; number of packages, articles and marks, weight, rate, revenue, advances, war tax, and whether collect or pre-paid, with, of course, the date stamped thereon.

The driver who makes the deliveries has with him the bills and delivery receipts. Sometimes he may have two or three manifest sheets to the load. When he takes the manifest back to the office. he also takes with it the money he has received and delivers it, with the delivery receipt, to the cashier. Each night every truck, of course, has its shipments manifested and it is at this time that the additional insurance that is mentioned is placed upon the merchandisc.

Pads of the shipping receipt forms, in quadruplicate, with carbon sheets between the leaves, are supplied to shippers, who fill them out when they are delivered, or picked up. Either the re-



Five-Ton Pierce-Arrow Van, of the Phillips Specials Daily Motor Service, of Philadelphia and New York

The car has a patent, non-leakable top, champagne-colored, with lettering in blue and gold

ceiving clerk, or the chauffeur, signs the top form and the three other sheets are returned to the firm's office.

The top sheet serves as the shipping receipt, the second as the freight bill, the third as the delivery receipt and the fourth and yellow sheet as the cashier's memo. The rate is inserted and the extensions made-that is, the transportation charges plus the war tax. The shipper indicates on the paper whether the shipment is to be collected or prepaid. Terms and conditions are printed on the back of the top sheet, or shipping receipt.

Where the value exceeds 50 cents a pound, if the shipper so desires, Phillips Specials service will take care of the extra insurance. The shipper may write in "Insure for" whatever amount he desires and the firm follows out his wishes, charging for the value in excess of 50 cents a pound. It is noted that extensions are made only on the freight bill and the cashier's memorandum. The latter is retained in the Philadelphia office until paid.

As regards the delivery receipt, after delivery of merchandise and the signing of the sheet by the consignee, it is returned to the Philadelphia office, or the New York office, according to the destination of the goods, and there filed alphabetically.

To those who have credit with the firm comes a statement every ten days, until the account is settled. This is a small slip, and contains spaces for entries under the caption: "For Motor Transportation in accordance with bills rendered."

Bookkeeping with this firm is reduced to lowest terms, being simplified as far as practicable. One book is used, wherein are recorded all firm transactions. One side is for receipts, the other for disbursements. Entries, of course, are made daily. Deposit slips are in duplicate, one of each being kept in the Philadelphia office.

In the cash book are entered the bills as paid, showing date, name of person paying bill, date of shipment and amount of bill.

An unusual procedure, showing close attention to details, is carried out by this firm, in sending at stated periods to all sales managers on the book, a private mailing card, 5 x 3 in., convenient for filing in a card index for future reference. This card calls attention to the "Phillips Specials," gives telephone number, etc. It is a dignified but constant reminder.

plaint Against Trucking Company

The Elgin and Chicago Traction Co., Aurora, filed a complaint with the Illinois Board of Public Utilities, against the Western Trucking Co., alleging that it operates a motor truck service for handling express and freight between Chicago, Aurora and intermediate points. without authority from the commission. The trucking concern operates three trucks and has built up a business that is cutting deeply into the revenues of the electric traction line.

Traction Company Files Com- The Federal Trade Commission Orders Firms to Cease Unfair Trade Practices

Federal Trade Commission ordered Robert C. Loock, trading under name Baltimore Hub-Wheel & Manufacturing Company, and the Holland-Baden-Ramsey Company, both automobile accessories jobbers of Baltimore, to cease and desist from "embarrassing, harassing, hampering or obstructing competitors,' by inducing accessory manufacturers to refuse to recognize such competitors as jobbers entitled to buy from the manufacturers at jobbers' prices or terms.

New York Licenses to be Made at Prisons

License plates that are being used for commercial cars, both for dealers and users, are to be produced by prison labor, a bill having been passed by the State Legislature to that effect. Equipment for manufacturing the plates is to be installed at the Sing Sing and Auburn prisons, and it is said that the state will effect a considerable saving, as the consumption of plates was approximately 500,000 last year. It is understood that New Jersey, which utilizes convict labor to produce its automobile license plates, has found the plan very economical.



HOFFMAN PROCESS

Hoover Laboratories Prevent the Use of Decarbonized Steel in the Making of Hoover Steel Balls

Decarbonization of steel simply means the burning out of the carbon.

It is possible for decarbonization to materially reduce the carbon contents throughout the entire section, but for discussion its detrimental effects can be confined to surface decarbonization for the reason that long before interior decarbonization takes place the surface is so decidedly affected that the condition is very obvious.

Photograph No. 1 shows a highly magnified section of wire or bar from which the ball is made. Its surface (upper portion) is decarbonized. That condition, as it appears in a complete section, is shown in Photograph No. 3.

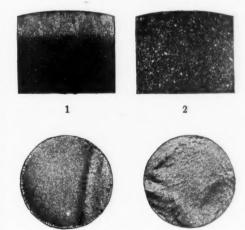
By comparing Photographs No. 1 and No. 2 the difference between a decarbonized surface and one of no decarbonization is clearly apparent.

The two conditions, as they appear in complete sections of wire or bar, are illustrated by comparing Photographs No. 3 and No. 4.

Decarbonization produces steel balls with soft or semi-hard surfaces. In spite of the most exacting visual inspection, as rigidly maintained in the Hoover plant, it would be quite possible for balls with decarbonized surfaces to escape inspection.

Such a possibility shows the great importance of the work of the complete Hoover laboratories. They guard Hoover quality—they guarantee uniformity in steel ball construction.

Such laboratories are not to be found in another ball manufactory in this country—further evidence of the extremes to which we reach to hold firmly to the established standard.



Hoffman Process

By the Hoffman Process it is possible (automatically) to produce steel balls of the very highest finish and closest accuracy. Carelessness and natural inaccuracy of human operators is eliminated. The Hoover Steel Ball Company is one of three ball makers in the world with rights to use the Hoffman Process.

Sum up the many reasons in favor of Hoover Steel Balls and you, too, will appreciate their superiority.

Hoover Steel Ball Company
Ann Arbor, Michigan

HOOVED STEEL BALLS

Government Survey of Motor Truck Routes Reveals Some Interesting Data

AULING farm produce to market in motor trucks represents one means of the successful so-lution of the "short haul," reports the Bureau of Markets of the U.S. Department of Agriculture, in a recent publication, "Motor Transportation for Rural Districts."* The failure of railroads to keep pace with the expansion of the short-haul business; the development of the producing areas adjoining the larger cities in porportion to the production demands made of them and the upbuilding of the motor-truck manufacturing activities, as well as the recent war emergency crisis, have popularized this method of moving farm produce to market.

Makes Survey to Ascertain Facts

The Bureau of Markets conducted an extensive survey of 60 rural motor routes to ascertain the defective practices, and as far as possible to suggest improvements which would stabilize the industry. The bureau found that rural freight is hauled by the farmer who owns a truck and handles his personal marketing as well as that of his neighbor by motor; by the local truck operators who haul farm produce as a business; by the local automobile or truck agencies that operate transportation trucks as a sideline; by the city transfer company which also engages in rural hauling, and by the larger corporation which operates a fleet of trucks over a wide range of territory. Naturally with such a diversity in the hauling agencies, there is a similar wide range in their methods of doing business.

Pioneers have made mistakes which should teach valuable lessons for their successors. For example, too many ambitious motor men buy their trucks first and then make a study of local conditions, and the prospects for the development of a profitable and permanent hauling business in their communities. They neglect to inventory such critical conditions as the volume of farm products produced along the contemplated routes, the volume of miscellaneous hauling supplementary to regular loads; the competition of other carriers and the character of the highways over which the trucks must run. A motor truck route established in a sparsely settled or non-productive region is foredoomed to failure, advise the experts of the Department of Agriculture. At least a potential supply of commodities must be available for hauling if there is to be sufficient business to make the route a paying one. A region devoted to the production of a few staple crops which move to market during a comparatively brief season will not provide business

for a permanent route. For successful operation a reasonably dependable tonnage is essential throughout the year.

Kinds of Products Affect Costs

Regions devoted to truck farming or dairying provide rich fields for motor truck operation. However, consideration should be given to the nature of the products to be hauled, as low-priced, bulky staples may not stand the transportation charges necessary to maintain a route. For illustration, it is unlikely that hay can be transported by motor truck for long distances except under unusual conditions with respect to price. Perishables may stand the motor truck tariff if the transportation service to market is speedier than the customary means of transportation. Such commodities as cream, milk and eggs which are high in price as compared to bulk, may bear a reasonably high transportation charge if more satisfactory facilities are offered.

Study Prospects Before Starting Route

The back haul, or return trip, which often is made without a load, constitutes an extravagant practice which truckmen should strive to avoid. Attention should be concentrated on the problem of arranging for freight so that there will be a profitable load on all trucks whenever they are operated.

Keen competition is another factor in motor truck service. Some operators have found it possible to compete successfully with rail service and yet to charge rates rather higher than were charged by the customary carriers. Such conditions, however, are only possible where the service is developed on a most extensive scale. Freight and express schedules in some districts have been unsatisfactory to shippers recently, and by offering a more prompt and speedy service, truck owners have developed a very satisfactory business that ordinarily would be handled by rail.

Good roads are a prerequisite to successful motor truck operation. Very few operators appreciate the increased expense which results from travel over poor roads. The unfortunate operator who tries to maintain his services over highways which are virtually impassable and unsatisfactory, has found that his daily operation costs far exceed the average normal expenses and seriously affect his profits.

Depreciation and Operating Costs

The man who plans to operate a motor truck should have a good working knowledge, not only of his engine, but of the entire machinery in general. The wages paid drivers vary in different sections, and for trucks of different sizes, ranging from \$2.75 to \$7.50 a day.

Data collected by the Bureau of Markets show that the annual cost of over-

hauling and repairing the trucks ranges from \$100 to \$900 a year. Those truck operators who make it a point to keep their machines in a constant state of repair have relatively small charges to meet for annual overhauling. On the other hand, those who operate their trucks as long as possible with no regular repairs often pay a very heavy overhauling charge at the end of the year.

Rates for Hauling

In some sections there are as many different systems of computing rates and charges for hauling as there are motor trucks, each owner having an original way of figuring his transportation toll. There are several factors which should be considered in the establishment of rates in any district. The value and the fragility of the load bear a direct relationship to the rate that should be charged. Very valuable or fragile loads involve the greater risk on the part of the carrier, and the tariff for the carriage of such goods should be sufficiently high to offset the risk involved. length of the haul naturally is another prime consideration. Road conditions directly affect operating costs, and hence must also be considered in establishing rates. The perishability and bulk of the load must be taken into consideration. Where complete delivery is made from the door of the shipper to the door of the consignee, and service is rendered which is not duplicated by the railroad, this additional service must be considered in fixing the rate. Practically no rates have been established on the basis of cost plus a reasonable profit. A satisfactory rate must be one which is low enough to attract business and high enough to offer a reasonable profit to the operator. Where conditions do not permit establishing such a rate, care should be exercised in starting a route.

Farm-to-farm collection of freight is practiced on short rural routes where comparatively few stops are ordinarily made. Such collection is costly, both in time and gasoline, and hence necessitates higher rates. The cross-roads collection system is popular also, the shippers centralizing their produce at certain points where it can be loaded on The central assembling the trucks. method where the shippers concentrate their freight at one point or where a lighter, auxiliary truck collects and delivers it, is worthy of trial, as it possesses many interesting features. The delivery of the goods at their destinations may be handled very satisfactorily in a similar manner.

The small-scale truck line usually collects the charges when the freight is accepted, while the more elaborate systems which haul regularly for different patrons submit weekly or monthly bills. It is essential that each truck operator, no matter how simple his system, should keep a record of his expenses. The Bureau of Markets, in an investigation of over 60 rural motor routes, ascertained that many operators who kept no accounts thought they were making a profit, when, as a matter of fact, they were gradually exhausting their original investment for current expenses.

^{*}A bulletin recently issued by the U. S. Department of Agriculture's Bureau of Markets, "Motor Transportation for Rural Districts," will aid the prospective operator. It will be sent free on request.



The Proven Advantages of Sewell Cushion Wheels Stand Out Prominently in the Motor Truck World

They afford the maximum earning power to motor trucks at the lowest operating expense.

The soft rubber cushions used in the construction of SEWELL CUSHION WHEELS give the resiliency and protection necessary.

Among our thousands of satisfied customers are many of the largest nationally known business institutions in America.

SEWELL CUSHION WHEELS are built and guaranteed to last for years.

Over 26,000 SEWELL CUSHION WHEELS now in service.

SEWELL CUSHION WHEELS can be applied without expense to the manufacturer or dealer.



A folder explaining the construction of Sewell wheels will be mailed on request.

BRANCHES:

Baltimore, Md.
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Cleveland, Ohio
Columbus, Ohio

Dallas, Texas
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Jacksonville, Fla.
Kansas City, Mo.
Los Angeles, Cal.

BRANCHES

Louisville, Ky. Milwaukee, Wis. Minneapolis, Minn. Newark, N. J. New Orleans, La. New York, N. Y. Philadelphia, Pa Pittsburgh, Pa. Rochester, N. Y San Francisco, Cal Seattle, Wash, Springfield, Mass

Sewell Cushion Wheel Company

Main Office and Factory: Detroit, Michigan

Specially Equipped Trailers Successfully Handle the Distribution of Bread

Detroit Concern Delivers 43,000 Loaves of Bread a Day to 141 Stores With Four Trailers and a Pair of Tractors

ROMPT and systematic service between the jobber or the warehouse and the store is an important consideration in the grocery business, where it is necessary at all times to be able to supply a customer's wants if trade is to be held. Perhaps nowhere else does this detail of merchandising come in for more careful consideration than with the so-called "chain" stores that in recent times have attained such prominence in all the large cities, and are constantly extending their scope of activities. Here experts are employed to handle the transportation problems, which are of just as much consequence as quantity buying at a low figure in keeping the business going.

The Kroger Grocery & Baking Co., with chain stores in Detroit and Cincinnati, furnishes an interesting example of transportation methods in the handling of baked goods. The company operates 141 stores in Detroit, and although it conducts a general grocery business, there are two separate and distinct divisions, the general warehouses being in one part of the city, while the bakery is in another, some miles distant, and operating separately as regards management and means of delivery.

In baked goods the Kroger company confines itself almost exclusively to bread. In a single day as high as 43,000 loaves are delivered to the 141 stores, an average of 300 loaves to the store. The farthest point reached is a trifle over five miles from the bakery, but inasmuch as the stores are widely scattered the mileage is considerably increased. At least two round trips are made daily

on each route, and the mileage on each aggregates 23 to 25 miles for five days in the week.

Trucks Haul Special Trailer Bodies

The city is divided into five major districts, radiating from the centrally located bakery, and a run to the electric interurban station, which is generally utilized as a filler for the truck that happens to have the shorter of the outlying runs. Three trucks are employed—two Mack tractors with special trailer bodies, and a Packard with stake body, the latter having been recently installed to do away with the night work that formerly was necessary.

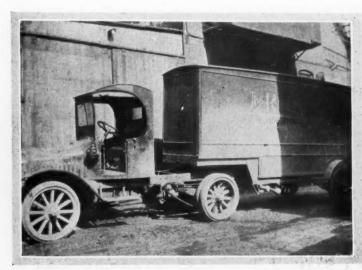
Until recently all shipments from the bakery were made on travs placed in the enclosed body trailers shown herewith. The system was ingenious, because it permitted the use of four to six trailers with a pair of tractors, not in trains but singly. Each trailer is fitted at the forward end with jacks, as shown in the illustration. Upon arrival at the bakery of the tractor and trailer the jacks were brought into play as a support for the front end of the trailer, while the tractor, released, picked up a full trailer and was on its way again in less time than the performance could be described in detail. While the tractor was out with a fresh consignment the empty trailer was being refilled at the bakery in readiness for another trip. Leaving an empty trailer and coupling on to a full one occupied less than five minutes, and the loss of time was thereby reduced to a minimum at the bakery.

But the system had its disadvantages. Everything was placed on trays, and at the point of distribution handling baked goods in this manner proved slow, and consequently, expensive. In some instances it was a case of unloading twenty trays, emptying and replacing them, which took too long, because bread must be laid down at a given time to supply customers.

Boxes Are Better Than Trays for Handling Bread

Finally the tray method was abandoned in favor of boxes, and this plan is being employed with great success. After being wrapped by machines, the bread is packed in boxes, each of which is capable of holding eight or nine tray loads. Thirty to forty-five of these boxes make up a load, the daily average for each machine being 13,000 loaves. Fifteen minutes generally proves sufficient for loading at the bakery, while two to three minutes is enough at a store, the boxes merely being dumped and empties picked up, where possible. The trailers are still employed regularly, and they possess certain advantages, because if anything goes wrong with a tractor it is merely a matter of hiring another and going ahead with deliveries while repairs are being made. In justice to the trucks it must be said that such contingencies are so infrequent as to cut no appreciable figure, but there still remains the possibility.

Monday and Friday are the heavy days of the week. Bread delivered in the morning is baked the night before. As there are no Sunday deliveries, it is





Part of the Tractor and Trailer Outfit Utilized by the Kroger Grocery and Baking Company of Detroit, Michigan

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e. is TIRUCK and TIRACTOR



Truck owner says Buda Engine combines bulldog tenacity with Heavy Howling.

that you are pub-Tighting a pooklet outified, "Stherior Engine Service," and us I am ober-The Buds Company, Sting Buds Engines and here been for the last two years, here in Syoning, I Monthy ablasoyses 74 Asia mncy 74 Acia monthy 86 acid monthy seem were cold to make the seem of the information. I have been handling the truck. We are hauling to the Salt Creek Oil Held, about 45 miles from hore, and I can say Mith truthfulness that the roses seems and make the worst that I have even seems. trucks, and have made a few trips with a There is not a motor here, or amphiere else, for that matter, that onn do the work as well as the Bods. That is a large statement, when one CODSIders that there are over a dozen different makes of trucks here, in fuot almost every truck of recognized mise is represented. The hays exert arms or remarker and corner as released that we have here.



The Boda Engine is the best, real pulling motor that we have here.

I have always said that it was 2/5 bull-dog and the rest (overment bull as to the last goap and them some) and that is more than one can say of some of the others. And as for standing up, it is a bother to some of ur uppe or the owners, where to drive so long before they get to see what is inside of a Buda.

No do Hawley o/o Matrona County Abstract Co.

> The truck or tractor you sell may embody the finest possible construction, but if the engine does not perform satisfactorily the selling resistance incurred is tremendous.

Prominent manufacturers are using Buda Engines because these engines are absolutely reliable.

What Buda did abroad—"the best record made by any engine in France"-Buda has done and is doing at home.

"Budaism" means performance—plus.

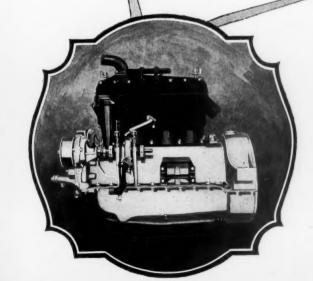
Insist on Buda in the truck you sell.

Our book, "Superior Engine Service," will interest you.

If you are not a Buda owner

send 10c for postage

The Buda Company
Harvey [Chicago], Illinois



necessary to double up on the schedule Monday, deliveries being made morning and afternoon. The same is true on Friday, when Saturday's demands must be prepared for. It is not uncommon for a truck to cover 65 miles on these days, a performance that would be out of the question with horse-drawn equipment. On one of these days the net tonnage of bread carried by the three trucks was respectively 18,600 lb., 22,650 lb. and 23,000 lb. This was exclusive of the boxes, which run from 30 to 45 to the truck

load, and weigh 25 lb. apiece.

Drivers report with their machines at 6.30 A. M., and usually finish about 4.30 in the afternoon, there being no restrictions as to hours, so that a man who sees fit to hurry his deliveries benefits thereby. One day's schedule at the bakery is typical. The truck in question arrived at 7 in the morning, left at 7.15, returned at 12.15 and was on its way at 1, left the plant again at 3.30, and reached the garage at 6 o'clock, having covered 65 miles. The running time was longer than usual this day, but otherwise the performance was representative.

Satisfied Drivers the Concern's Biggest Asset

No deliveries are made Saturday, the drivers devoting themselves to covering their routes and gathering up the boxes they were unable to bring in during the week. As a rule they finish shortly after noon.

"With a schedule like this, and good wages, we are able to get an exceptional class of drivers," says Superintendent Hermann, of the bakery department. "We find it much better to adhere to this policy, because in our business promptness means a corresponding saving. The bread must be laid down just as quickly as possible. As showing the spirit of co-operation displayed by our drivers, it is interesting to note that occasionally the drivers are held up in their departure because they get back so quickly that the ovens and the wrapping machines can not keep up with them. But this is the exception rather than the rule. I cite it merely as an illustration of the possibilities if you have good feeling all around, and as showing the advantages of the truck over a horse-drawn outfit.'

Westinghouse New Annual Catalogue.

The Westinghouse Electric & Mfg.
Co., East Pittsburgh, Pa., has issued a complete catalogue in which all of its electrical supplies are listed.

It is made up of 1264 pages of description pertaining to the products of the company, and contains a complete cross index, and index to style numbers, and a table of "approximate cost multipliers," which enables one to figure the approximate cost of all supplies listed.

This book contains a vast amount of information of a technical nature. Practical suggestions for the use of many kinds of apparatus for the transmission and utilization of electric power are

It is planned to issue this catalog annually.

Motor Truck Operating Costs Should be Given More Consideration

By C. E. STONE*

HE one basic factor in any transportation scheme is absolute known costs. Without them none can succeed. The railroads have them—why not the motor truck operator?

So carefully kept are the figures of the various transportation lines that any physical or social change immediately becomes apparent and is given consideration. For instance, when women started wearing tight skirts some months ago the fact became instantly known to the operating heads of the Pennsylvania Railroad—the style delayed their train stops exactly sixteen seconds.

If I were asked for one single suggestion tending toward the universal wellbeing of the trucking industry I would say study and adopt, insofar as possible, railroad practice. The roads are awake to the imperative importance of absolutely knowing costs. They also know the value of inspection and upkeep.

Ignorance of, or indifference to, the well being of motor trucks is responsible for the downfall of many who enter the trucking business.

In railroad practices, an express passenger locomotive is inspected at the end of every eighty miles, a freight locomotive every 150 or 200 miles. As many as five inspectors work on a locomotive at one time. Each is responsible for certain groups or parts.

Under these conditions passenger locomotives run 127,000 miles without going to the shop for overhauling, freight locomotives, 100,000 miles.

Just as the transportation lines have set down "round-house" care as of paramount importance, so should motor truck operators give the same subject even more attention, for their machines are traveling over all conditions of road surface, multiplying many times the necessity of inspection work, and as a rule these vehicles are not operated by as highly trained and skilled hands.

The average truckman's quotation for service is rarely based upon known facts and figures. The practice of slashing rates or following those of the other fellow represents as great an evil in the development of motor transportation as anything the motor truck dealer or his salesman was guilty of in the past.

The responsibility for the prevailing ignorance, as to costs and charges, cannot be laid to the truck operator alone. The motor truck manufacturer has, in a very large measure, contributed to this. For years his literature and so-called sales arguments have been replete with misstatements and fragmentary facts. Tables of operating costs were distribut-

* Extracts from an address made by C. E. Stone, transportation engineer, I. C. Wilson Co., Detroit, before Transportation Club.

ed, which seemed to prove conclusively to the prospective buyer that, in comparison, many of our recent war industries are but pikers in the return of inflated revenues.

The professional haulage man is naturally desirous of studying cost figures and analyzing such factors as influence the various items. I am giving here the average cost figures of six 3½-ton stakebody Wilson trucks, taken from the cost records of one of our owners in Detroit,

You will notice that "Cost of doing business" is eliminated. I have done this advisedly, for this item is an unknown quantity. Under its heading come accidents, general expense, bad accounts, advertising, etc. To meet these this owner charges up \$1 a day per truck, which he finds about meets the requirements. However, he has a general sinking fund of 10 per cent. of the daily gross receipts of each truck which takes care of this matter. Here are the operation costs on a 3½-ton stake truck:

Investment

investment:	
Chassis\$3, Body	800.00 350.00
84,	150.00
Less tires (\$74.25 each, 7,000 mile guarantee)	445.50
Costs are based on 300 working days year.	704.50 in the
Yearly fixed charges: Interest on \$3,704.50 at 6 per cent.\$ Insurance—\$5.75 per hundred Collision—full coverage \$152 (\$50 deductible) Liability (truckman) License—15c per hp Weight 15c per 100 lb., chassis	31.13 102.00 135.00 4.86
City dray Tax 3 per cent. on 70 per cent. of \$4,150 (2905) Garage rent per month \$15 Driver \$5 per day (300 days) 1	
per yr. \$2 300 days at \$2.276.61 per day cost Operating costs: Fuel at 24c per gal. 6 mile per gal	r mile r mile r mile

Pamphlets for Foremen.—The United States Training Service, U. S. Department of Labor, Washington, D. C., has in preparation a series of monographs dealing with the special problems which the foreman in an industrial plant is called upon to solve. These pamphlets, the U. S. Training Service states, will endeavor to set forth in concise and yet sufficiently detailed form, the approved practices for foremen in the performance of their various duties.

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THE S K F INDUSTRIES, INCORPORATED, announce the institution of a scientific organization for the study of anti-friction devices with the intention

- —of setting on foot a thorough and scientific study of friction and the application of more improved antifriction bearings;
- —of offering to American manufacturers in every line, a bearing engineering service designed to investigate any manufacturer's bearing difficulties and offer advice as to bearings exactly adapted to his specific needs; and
- —of endeavoring through the bearing knowledge developed in this manner and through its scientific investigations to be of assistance to the entire bearing industry in the improvement, not only of design, but also of methods of application.

With the conviction that American manufacturers will welcome assistance of a scientific nature in the solution of frictional difficulties, the S K F INDUSTRIES has established a service, entirely scientific in its intention, entirely divorced from the sale of any specific type, for the study of bearings in relation to manufacturing.

Heretofore, such assistance and advice have been rendered solely by bearing manufacturers as individuals. It is hoped, through concentration in one unified research, to organize the investigation of frictional problems and the giving of advice thereon in a more thorough manner, overcoming the past limitations.

The new bearing service will be both scientific and immediately practical. On the scientific side, centering in its engineering laboratories, which will be completely staffed and equipped for research of a difficult nature, it will undertake the investigation of the frictional difficulties and losses involved in the transmission of power. It will also set on foot immediate studies of the design and application of all the types of bearings now in use, making working tests and experimental tests where necessary.

On the practical side, the bearing service will place at the disposal of manufacturers, a staff of engineers who will go into the plants of any manufacturer, investigate his specific bearing difficulties and offer advice as to the type, design and application best calculated to remedy such difficulties.

It is hoped further, through the data gathered in this plant service to manufacturers, coupled with the findings of the research studies, to establish resources of knowledge that will be of assistance to the entire bearing industry in the improvement both of design and manner of application.

The S K F INDUSTRIES is peculiarly fitted to undertake this long-needed service to American manufacturers, inasmuch as it represents a pooling of experience of two manufacturers whose past activities in the application, one of the deep-groove type of bearing, the other of the self-aligning type, have brought them into almost daily touch with every type of bearing. Combined with these is the experience of a company whose engineers' energies have been devoted solely to the manufacture of balls, a phase of the industry no less important than the completely assembled bearing itself.

To those who know of the S K F Ball Bearing Company, the Hess-Bright Manufacturing Company and the Atlas Ball Company, this massing of experience and engineering abilities, further to be re-enforced by the study of bearings from the research side, will mean advice with the impartiality of scientific effort and resources of practical knowledge not to be equalled by any other one organization.

American manufacturers are invited to avail themselves of this bearing service at any time.

Motor Trucks Engage in Nine Thousand Dollar **Hauling Contract**

Concrete Sewer Pipes for Wichita, Kansas, Hauled by Truck to New Pipe Line. Efficiency Kinks **Employed That Save Time in Loading**

LONG the bank of the Little Arkansas River, in Wichita, Kansas, the Massey Construction Co., of Chicago, is making concrete pipe sections for the sewage system of the town. These giant sections must be transported to the section of the city where the new line is being laid and a fleet of three 2-ton Denby trucks is doing the hauling under contract.

The Salt City Motor Car Co., formerly agent for the Denby truck in Hutchinson, is doing the hauling for the city. Last September the city began work on the new sewer line and the truck company was asked to offer a price on the hauling work. After figuring on the tonnage, the length of the haul and the probable amount of work the trucks would do in a day, the city was quoted a per-ton price for doing work. Offer was accepted and work was started.

rucks Must Keep Material Moving

The truck is a vital connecting link between the producing and the finishing end. It must do its work consistently to keep from tying either end up. This is so important that there is a penalty for any delay the trucks may cause the opera-Twenty-five dollars is forfeited any day the trucks do not move the material fast enough to allow both ends of the line to continue operations. Three 2-ton Denbys have been doing this work successfully since last September, and if teams were used it would require about forty-five to keep the pipes moving fast enough. The 2-ton truck can carry three of the pipes on a load while the team could handle but one, and on the average 3.1-mile haul the trucks can make about five trips to a team's one.

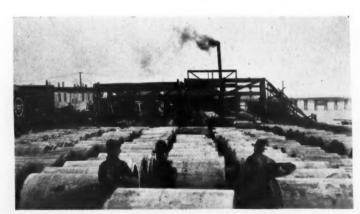
There is a connected series of operations in which the trucks play a vital part. At a big concrete mixer the cement is prepared. A platform on narrow gauge tracks carries a huge container back and forth from the mixer to the pourers, where the soft cement is poured into the moulds or forms, there to remain until set and hardened. There are two double rows of sheet-steel forms extending back from the mixer. Each row has 25 forms, and about 50 are poured each day. Astride each double row of forms are two A-frame overhead cranes, set on tracks, so that they can be moved along as the pouring progresses. One of these cranes moves ahead and with its aid the steel forms, around one row of poured pipes, are removed, oiled, and set in place in the row alongside for the oncoming pourers. The inside of the form is oiled to keep the concrete from sticking to the sides.

The container, brought from the mixer on the railed platform, is raised by the rear crane and carried over to the form, where it is poured and returned for another load. It is a series of what might be described as progressive production. These forms are poured in the open air and to dry them quickly a steam line is extended over the top of the rows with feeder pipes reaching down into each form. At night the newly poured forms are covered with canvas and the steam is turned on. This maintains a summer temperature through the night and dries the concrete sufficiently to make it hard enough to remove the forms the next day without breaking the edges.

After the pipes are made in the forms they are rolled on to the limited loading platform in rows. The trucks must move the pipe from this platform fast enough to make room for the ones being made.

To handle these pipes the body on each truck is of special design. Two long 3 x 4's are placed on top of each side member. Steel rods and cross pieces hold them at the upper end. At the lower end they extend beyond the frame of the truck. A heavy angle-iron extension is fastened to the truck frame as

Showing a Few Days' Concrete Pipe Production Ready to be Hauled Away by Motor Trucks.



The Views Below Show the Special Loading Platform With Fifth Wheel Arrangement, and the Two-Ton Denby Being Loaded





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balanced oversize

-means Power-Speed-Economy

THE one feature you immediately observe as you examine a Master Truck is its Balanced Oversize. It is this Balanced Oversize which makes for Master performance. It is this Balanced Oversize that is responsible for the power, speed and economy with which Master Trucks make good in giving uninterrupted service.

Balanced Oversize is the Master feature

of Master construction, every part designed and built not merely OVER-SIZE, but balanced in oversize with the part working with it.

There are many concerns in your city in need of such a truck. The sale of one Master results in other Master sales. Write or wire to learn if your territory is open.



MASTER OF THE LOAD ON ANY ROAD



A View of the Pipes in the Course of Production

In front is a half-finished form with the reinforcing wire around it. The outside section is being removed from a finished pipe on one side and transferred to the one in the foreground. At the rear the men can be seen pouring a finished form.

shown in the sketch. On this angle-iron the rear ends of the wooden 3 x 4's are supported. The super-frame is longer, to enable the truck to handle three of the smaller pipes.

The pipes are rolled up onto the truck and held secure by a wedge at the rear, placed at the proper distance for the different size pipes. An efficient method of loading the pipes on the trucks is used. The platform is the proper height for loading onto the truck, but there is not sufficient room, where the truck must come in, to permit it to back into the platform. It must back alongside and in this position or the pipes cannot be rolled onto the body. To provide for this a square platform on legs was constructed large enough to hold one of the pipes. On the center of this platform is a fifth-wheel arrangement. The platform is placed against the main platform in line with the row of pipes being moved. The truck backs along the large platform into the smaller one. Each pipe is rolled out onto the fifth wheel on the small platform, swung around 90 deg., and rolled onto the truck. The truck is loaded in about three minutes with three of these pipes.

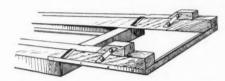
When one row of pipes has been moved the truck-platform is hitched to the truck and is dragged into line with the next row of pipes and the loading of the truck thus continued.

The weight of the pipes makes it impossible to swivel them without the aid of a device such as used. The pipe line when started is small in diameter and increases as it goes along. The pipes, therefore, differ in size and weight. Each is 4 ft. long, but the diameter ranges from 27 to 45 in. The different diameters with their corresponding weights are as follows: 45 in., 3200 lb.; 42 in., 2800 lb.; 39-in., 2400 lb.; 33 in., 1800 lb.; 30 in., 1500 lb.; 27 in., 1250 lb.

The trucks make about 15 trips a day. The pipe line being put in is 6 miles long, so that about 7925 pipe sections will have been transported by the trucks

when the work is completed. It involves a sum of about \$9000, and is said to be the biggest hauling contract in the state of Kansas.

The Salt City Motor Car Co., which is operating the trucks, is maintaining a very complete repair shop in the truck garage, so that should anything happen to one of the trucks, it can be put into



The Wooden 3 x 4 Inch Frame and Block Wedge Arrangement Used for Holding Pipe Sections in Place

commission as soon as possible. Competent mechanics are in charge and the equipment includes such essentials as an oxy-acetylene welding outfit, a portable electric drill, a lathe-drill, a lathe, an air pump, parts stock bins filled with essential parts, and the more common tools found on the bench of the repair shop.

Motor Truck "Feeders" Forecast by a Railroad Authority

That the railroad of the future may find it more economical to tear up short line tracks and develop motor truck transportation in its place, was the forecast made recently in an address on the future status of the railroads, by C. A. Morse, assistant director of operation, in charge of engineering and maintenance for the U. S. Railroad Administration. Mr. Morse delivered his paper before members of the New York Railroad Club, and his remarks were followed with close attention as coming from one of the best known railroad men in the country.

"The perfection of the motor truck and tractor, together with the universal use of the automobile, has introduced a new

element into the transportation problem that should be taken into consideration at this time, while studying the reorganization of the whole transportation question," said Mr. Morse.

"Good roads are demanded for the use of the automobile and a study should be made to see what additional expense would be necessary to so construct them that they would serve for motor truck and tractor. Where, heretofore, development of the country for 50 miles either side of a trunk line of railroad has required the construction of light branch lines, it is a question to be seriously considered whether this policy should be continued or whether good wagon roads should be constructed and the products of farms and passenger travel should not be handled by motor trucks, and automobiles to the main line.

"Taken alone and considered as a unit, practically none of these small branch lines pay expenses, but as gatherers of freight and passengers to increase density of traffic on the main lines they are sources of profit.

"As, however, the traffic gathered by them is turned over to the main line with a deficit attached which has to be overcome during the main line movement before any profit is made, it would be a decided advantage if this traffic could be delivered to the trunk line by means of the motor truck, tractor and automobile without this bill of expense attached."

Noting the fact that a handling would thus be obviated, since it is now necessary to truck farm products to the short line branch, then transfer them to the main line, Mr. Morse continued:

"Investigation of this subject may show the desirability as good roads are completed, of the taking up of many branch line railroads and utilizing the abandoned road bed for improved motor road, thus decreasing the expense of maintenance and operation of our railroads and giving in its place a well located motor road. Such a change would call for increased facilities at stations along the main line for passengers and for hauling freight, including storage, trackage, etc., but it would mean the concentration of supervision and labor, permitting better housing and living conditions for employes.

"Motor driven conveyances have gradually been changing conditions of railroad transportation for the past ten years, and now that the general study of transportation facilities is up for discussion, it should be taken into careful consideration, and due weight given to its influence, on the economies of the situation."

Electric Steel Co. of Indiana has recently completed an addition to its foundry which will house a chemical laboratory. The addition consists of a detached one-story building, fully equipped with complete chemical apparatus for the analysis of melting stocks and alloys for the determination of preliminary and also those departments having to do with highway transportation.



A FACT—that in a 12-hour day, a truck equipped with Pneumatics will transport 50 per cent. more merchandise than the same truck equipped with Solids.

Also—tests proved that on a 2-ton truck, at factory price, the additional cost of Pneumatic Tires was not only made up within the year, but showed a generous saving over the operating cost of Solid Tire Equipment.

Such figures and facts account for the tremendous demand for UNITED STATES 'NOBBY CORD' PNEUMATIC TRUCK TIRES.

United States Tires are <u>Good</u> Tires







Activities of the Motor Truck Association of Philadelphia

OFFICERS

T. K. QUIRK President

W. ROSS WALTON Treasurer J. HARRY SCHUMACKER Vice President

> W. H. METCALF, Sec'y 328 N. Broad Street



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COMMERCIAL CAR JOURNAL OFFICIAL ORGAN

DETERMINED stand on the provisions of the proposed new legislation governing motor licensing in this state, and regulating the size, load and speed of motor trucks in Pennsylvania, was taken on Wednesday night, April 16th, by members of the Motor Truck Association of Philadelphia, at their meeting at Hotel Adelphia. They decided to have a committee submit their objections to the measure, as it is now framed, to State Senator Clarence J. Buckman.

Senator Clarence J. Buckman made the principal address. He explained the measure, which is a combination of a bill offered by himself and another measure proposed by Representative Dithrich.

Senator Buckman said his bill did not represent the suggestions of any organization, but was meant to be fair to all concerned. Because of a possibility of a constitutional prohibition against a revenue bill originating in the Senate, he agreed to have the features of his bill combined in the House bill of Mr. Dithrich, and offered to hear objectors when the measure reached his committee in the Senate. He said the new bill, as proposed, would bring in between five and six million dollars a year from li-

censes, as against four millions now received. Some of the features that are included in the bill as proposed, he said,

A reciprocity clause for trucks operating in this and other states, providing foreign trucks must take out a license here if coming into the state oftener than once a month; the license for trucks under 3000 lb. is based on horsepower, the license being 40 cents per horsepower; above that weight, it is based on load, as follows: 3000 to 4000 lb., \$15; 4000 to 6000 lb., \$25; 6000 to 8000 lb., \$40; 8000 to 10,000 lb., \$60; 10,000 to 12,000 lb., \$100, and 12,000 to 14,000 lb., \$150. Provisions are also made for trailers. After Sept. 1 the fee is on a half year basis, the speed regulations ranging from 8 to 15 m.p.h., according to size and weight of truck. This feature will probably be attacked. The maximum load is 12,000 lb., or 26,000 including weight of truck. The maximum length is 336 in. and width 90 in., and the size and capacity must be painted on body. Penalties vary from \$25 to \$100, or 6 months' imprisonment. Provision is also made for receiving special permission from the Highway Department for excess loads, where the route to be traveled is specified. A new provision also is made, specifying the right of way at rightangled crossings, allowing the vehicle on the right the right of way. The Association decided to have its Legislative Committee send to Senator Buckman their analysis of the bill with recommendations.

A. W. Sutherland, chairman of the Good Roads Committee, presented some data showing that the average of only two cars per mile use unimproved roads, and 15 cars per mile use improved roads, an argument to be used for better roads. He urged members to confer with their representatives to learn the conditions of roads in their districts and said that the Western part of the state was getting three-fourths of the contracts for improving roads.

Others who spoke were: Captain C. J. Clarke, of the Federal Vocational Board; C. B. Allasandroni, president of the Italian Societies of the United States, on "Italia Irredenta," and former Congressman J. Washington Logue also spoke on "Fellowship." Thomas Quirk, president, presided.

E. J. Berlet was appointed chairman of the Speakers' Committee.

It was decided to hold the usual annual outing at the Mohican Club, on June 21, 1919.

Revised Rules for Rating Commercial Car Insurance on Payroll Basis

The National Workmen's Compensation Bureau announces, as effective April 1, a new system of rating commercial type automobiles of fleets of five or more. Under this plan, policies are issued at an estimated advanced premium, subject to adjustment. The premium is based on the number of chauffeurs engaged in the operation of the automobiles and is determined by dividing the entire payroll for regular and occasional chauffeurs by the average per capita wage. According to these new rules, if an assured owns five or more commercial automobiles and agrees to carry personal injury liability insurance in the company, the insurance shall be written on the following basis:

Instead of applying a rate to each automobile owned, an estimated advance premium shall be computed by applying the manual rate or adjusted rate, to the average number of automobiles owned and in use on the date of insurance—this includes hired cars. The actual

earned premiums for the policy term shall be obtained by determining the number of chauffeurs and applying to each number the manual or adjusted rate. This number of chauffeurs shall be determined by ascertaining from the assured the actual per capita remuneration, excluding overtime, of all operators of automobiles; then the total annual remuneration for all operators—including overtime—shall be divided by the per capita remuneration, and the result, plus one chauffeur, if the assured drives a truck, shall be the number of chauffeurs upon which the earned premium is based.

If trailers are owned and operated in connection with the above ruling, the assured shall keep a record of the number of trailers owned and premium adjustment shall be made on the basis of the number of trailers owned.

Attached to each policy is an indorsement in which the assured agrees to abide by all the stipulations noted above, and in so doing, to keep accurate and detailed records, in such a way as is therein prescribed by the company.

The minimum annual premium for this policy shall be the annual premium for at least five commercial cars.

British Government to Investigate Motor Car Markets

The Department of Overseas Trade (Development and Intelligence) and the Association of British Motor and Allied Manufacturers, Ltd., have just now completed arrangements for the immediate despatch of an investigator to Australia, New Zealand, India and the Far East to ascertain the conditions and prospects in those territories for the sale of British motor vehicles, their parts, and accessories. Among the subjects to be covered in the investigation will be technical specifications of the cars most in demand, facilities for obtaining fuel, road systems, customs duties, legislative restrictions, importers, trade organizations, methods of competitors and transport facilities.

In the course of his mission Ceylon, Singapore, Batavia, Brisbane, Sydney, Melbourne, Adelaide, Hobart, Wellington, Yokohama, Shanghai, Rangoon, Calcutta and Bombay will be visited by the investigator. The cost of investigation is being defrayed in equal shares by the association and by the British Government.

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The New Truck Buyer

The Truck Buyer of the Past is no longer the Truck Buyer Today. In the past he had no truck experience to go by, and was willing to buy it. But no longer.

Today in buying a truck he is cashing in on his experience of what Operating Efficiency in a truck means.

To win the 1919 Buyer to your truck, more than ordinary specifications are needed. For he knows now that there can't be Operating Efficiency with Ordinary tires. Costly experimenting with one ordinary tire after another has impressed that truth upon him.

Be prepared for the exacting demands of the Experienced Buyer of 1919: Offer him more than Ordinary Specifications. With Polack Truck Tires—the Oldest Steel Base Truck Tires in the World—the truck tires that continue year after year in Superior performance without costly experimenting to the user—included in your truck specifications, your truck at once stands out in appealing to the demands of present day experienced truck buyers for more than ordinary specifications.

Here is a typical instance of standardization in Polack year after year satisfaction.



STAR MOTOR DELIVERY CO

CHICAGO

Quaranteed uninterrupted service

PART OF FLEET OF 138 TRUCKS EQUIPPED EXCLUSIVELY WITH POLACK TRUCK TIRES

Truck Manufacturers:

Help your Dealers sell the 1919 Experienced Truck Buyer-equip your trucks with Polack Truck Tires, the pioneer of solid truck tires.

Truck Dealers:

Join the ranks of Progressive Truck Dealers. Have your trucks come thru Polack-equipped, and enjoy the distinction of selling trucks of more than ordinary specifications, which Experienced truck buyers are demanding more and more. The Polack Dealer in your territory is at your service.

Truck Users:

As a 1919 Buyer you naturally are no longer satisfied with ordinary tire specifications. It is no longer necessary for you to take ordinary tires on the truck you buy. Specify Polack Truck Tires on your new truck and your Dealer, as a progressive merchant, will see that your truck is Polack-equipped. The Polack Dealer in your territory will gladly assist you.

POLACK TYRE & RUBBER G.

NEW YORK

WORLD'S

Metal and Rubber Markets

Little Activity in Steel Market at Present

Although it is known that buyers of steel are in need of supplies at present there have been only occasional inquiries reported and few orders. The lack of buying has increased overhead expenses and the smaller and independent interests are finding it difficult to make ends meet.

A report from Washington indicates that an effort is being made to have the steel committee confer with the officials of the Railroad Administration so that some agreement may be reached in the near future. It is thought that the buying movement expected for some time will come with the patching up of the price tangle in Washington.

Steel Products Prices

Per to	n, Pitts	burg	h	_						
Bess	emer bi	llets			 	 	 \$38	50	a	
Open	hearth				 	 	 38	50	a	
Forg	ing bille	ets .			 	 	 51	00	a	
Shee	t bars				 	 	 42	00	a	

Sheets

The following prices :	are for 100-bundle lots
and over f.o.b. mill:	
Blue Annealed Sheets	S

Pittsburgh	\$3	55	a	
Philadelphia	3	79	a	
Chicago	3	82	a	
Galvanized Sheets of Black S	She	et (Jau	ge-
Pittsburgh	\$5	70	3	
Chicago	5	97	a	
Tin-Mill Black Plate-				

Bessemer iron\$29	35	a	
Bessemer steel, f.o.b. Pitts 38	50	a	
Skelp, grooved, steel 2	45	a	
Skelp, sheared, steel 2	65	a	
Ferromanganese (70 per cent.)130	00	a	
Steel, melting scrap 15	50	a	
Steel bars 2	35	a	

COPPER.—There are indications of a buying wave in the copper market, according to producers, but at present sales are small and confined almost entirely to the smaller dealers.

ALUMINUM. — Conditions in this market continue quiet. Prices range between 29c and 31c per pound for ingots, 98-99 per cent.

TUNGSTEN.—Conditions continue to gain. Chinese ore continues to sell for spot delivery at \$7 per unit. High grade scheelite and wolframite are selling strongly at \$10 per unit.

Prices of Finished Products

The following prices are c	urr	en	t on
brass and bronze items:			
Copper sheets, hot rolled22	50	a	
Copper sheets, cold rolled23	50	a	
Copper bottoms30	50	a	
Seamless tubing, bronze29	50	a	
Cut lead sheets 7	75	a	
Copper rods19	25	a	
Copper wire	25	a	18 00
High brass wire18	75	a	
High brass sheets18	75	a	
High brass rods17	75	a	
Low brass sheets20	50	a	
Low brass wire20	50	a	
Low brass rods21	25	a	
Brazed tubing, brass29	50	a	
Brazed tubing, bronze33	50	a	
Seamless tubing, brass27	00	a	
Seamless tubing, copper28	00	a	

Prices of Old Metals

The market is quiet but steady. Current prices are as follows:

Buying. Selling.

- Manimum	Duying.	Semme.
Cast scrap	17 a17½	18 a19
Sheet scrap	17½a18	191/2a20
Clippings	.20½a21	21½a22½
Heavy machinery comp.	.121/a121/2	13 a13½
Heavy and wire	11% a12	121/2a13
Light and bottoms	101/4 a 101/2	111/a113/4
Heavy, cut and crucible.	121/4 a13	13% a14
Brass, heavy	71/4a 71/2	8 a 81/4
Brass, light	. 61/4 a 61/2	6% a 7 .
No. 1 clean brass turning No. 1 comp. turnings	$386\frac{1}{2}a6\frac{3}{4}$	7 a 7½ 11½ a11¾
Lead, heavy	41/4 a 43/8	41/2a 4.60
Zinc scrap		4½a 5
Block tin, scrap	.60 a62	65 a66

Rubber Market Steady

There has been little change in the rubber market. Business going on between dealers in forward deliveries of plantations serves to keep prices on a fairly steady basis, despite the fact that factory buyers seem little interested in either futures or spot offerings.

Prices of Crude Rubber

Trices of Crade Rubbel			
Para-Up-river, fine per lb	56	a	
Up-river, coarse	34	a	
Island, fine	474	2a	48
Island, coarse	214	¿a	22
Caucho, ball, upper	*341	₂ a	35
Caucho, ball, lower		a	
Cameta	*221	2a	23
Plantation-First latex, pale crepe	47	a	
Brown, crepe, thin, clean	451	2a	46
Smoked, ribbed, sheets	461	4a	
Centrals—Corinto	35	a	37
Esmeralda	35	a	37
Guayule, wet	30	a	
Guayule, washed and dried	40	a	
Balata, sheets	90	a	
Balata, block, Ciudad		a	75
Balata, block, Panama	55	a	60
Mexican—Scrap	39	\mathbf{a}	
Slab	32	\mathbf{a}	* *
African—Massai, red	55	\mathbf{a}	

* Nominal.

SCRAP RUBBER.—The situation lacks new features, the market being steady with trading quiet.

Rural Motor Express as a Public Utility*

With but 250,000 miles of railway in the United States as against 2,500,000 miles of highway, the importance of the Rural Motor Express as a service to the public at large cannot be overestimated and in effect, its economic relation to cost of living is so close as to justify its classification as a public utility on a par with other services which seek to provide us with the necessities of life.

Past experience has shown that at some point in the operation of such units, the factor of regulation must be taken into consideration, as otherwise we are confronted by one of two conditions: first, either one group is so much more powerful than the others that it assimilates them and becomes a monopoly, or second, undue competition results in

an uneconomic condition that forces all parties into bankruptcy.

Rural motor express operation has tended to move toward the latter conclusion. Numerous incidents can be cited which illustrate the point and which are anything but special in their application.

War conditions enforced a transfer of larger quantities of freight from the rail-road to the highway. When normal conditions were restored the motor express routes could not compete with the rail-roads and their business was either taken entirely away from them or greatly diminished.

In Colorado a motor truck route was established between two good sized cities. A good rate was fixed and the company profited. Its operations attracted other investors, a rate war ensued, both were forced to withdraw and the community suffered in consequence.

In other cases men of little capital were attracted to the business by the success of others, and through inaccurate knowledge of operating and overhead costs, fixed rates at too low a point.

Finally unscrupulous operators of no financial responsibility crept in, or honest operators hired unscrupulous drivers, with the net result that costly shipments were damaged in transit, leaving the shipper without financial recourse, and consequently setting up a resistance to future operations by efficient, responsible organizations.

In view of these conditions and going back to the first consideration of the function of rural motor express as a public utility, it would seem that the subject is sufficiently important to the public to justify the enactment of legislation which would:

1. Place the matter of rate making in the hands of a public utility commission which would base those rates upon a knowledge of local conditions, making them equitable to shipper and operator alike, and making impossible neglect of the interests of the community, which should always be considered as of first importance.

2. The enactment of legislation which would seek to protect the shipper from undue loss in transit as he is now protected in the case of railroad traffic.

3. The compilation of educational data which should teach the motor truck operator how to gauge the needs of his territory, how to arrive at his operating costs, and how to give the best service to the public.

The Department of Commerce Has Lists of Importers

Several pamphlets containing lists of importers of automobiles and accessories who are interested in communicating with American manufacturers have been compiled by the Department of Commerce. These importers are located at Batavia, Dutch East Indies; Bombay, India, and Hongkong, China. Manufacturers can obtain these lists by addressing the Department of Commerce, Washington, D. C., referring to file numbers 9504, 9521 and 9510.

^{*}From Motor Truck Committee, National Automobile Chamber of Commerce, 7 East 42nd St., New York City.

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Modern Transportation

EVERYONE who has a transportation problem would do well to read the advertisement of The White Company, of Cleveland, Ohio, on pages 104 and 105 of the Saturday Evening Post, issue of May 31st.

The character and standing of these owners of trucks is conclusive proof that motor trucks are an absolute necessity.

This list is further evidence that the careful buyer is buying motor trucks made by reliable manufacturers who have been established for years.

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Established 1897